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Wired Ottomans: A Sociotechnical History of the Telegraph and the Modern Ottoman Empire, 1855-1911

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by

Pauline Lucy Lewis

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ABSTRACT OF THE DISSERTATION

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and the Modern Ottoman Empire, 1855-1911

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Pauline Lucy Lewis
Doctor of Philosophy in History
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Professor James L. Gelvin, Chair

This dissertation explores the connection between telegraphy and the emergence of new institutions, practices, and imaginaries in the modern Ottoman Empire. First established during the Crimean War (1853-1856), the Ottoman telegraph system grew into a complex network of human and non-human actors that shaped both the material and imaginative landscape of the empire. Emphasizing the co-constructive relationship between telegraphic infrastructure and Ottoman society, this study examines how the telegraph was a mode for specific practices and discourses that were unique to modernity as it emerged in the empire, specifically the development of territorial sovereignty; the rising ethos of technocratic authority; the

interdependence of the Ottoman state with foreign companies; and new conceptions of time and space among Ottoman citizens.

This study also positions the history of the Ottoman telegraph network within the broader story of global telegraphy. Drawing on sources from the Ottoman state, Arabic and Turkish literature, British telegraph companies, and the International Telegraph Union, it reveals how telegraphy both supported and strained the process of Ottoman state-building in an increasingly connected world. First, this study shows how the development and operation of telegraphic infrastructure contributed to practices and discourses associated with modern governance, specifically territorial sovereignty and technocratic authority. The building and managing of an expansive, grounded, and technical network required the Ottoman state to perform new functions, such as defending remote territory and maintaining a corps of telegraphers who were knowledgeable in the "universal" science of telegraphy. Second, this study demonstrates how the network acted as a site for the empire's participation in the globalization of the late nineteenth century, which was marked by the transnational reach of British capital and the new epistemic framework offered by electrical communication. From the Ottoman state's partnership with British companies to manage its submarine cables, to the emergence of new temporal and spatial concepts that could only exist in a telegraphic episteme, the network connected the empire to a world governed by European technical norms and electrical speed.

The study concludes with a brief discussion on the role of the telegraph network in the Armenian Genocide, exploring how the technology's form and its social practices set particular temporal and spatial parameters for the catastrophe. By offering new possibilities and constraints to the Ottoman state and society, the sociotechnical network of the telegraph undergirded modernity as it emerged in the empire, in its grandest and most brutal forms.

The dissertation of Pauline Lucy Lewis is approved.

Sarah Abrevaya Stein

M. Norton Wise

John A. Agnew

James L. Gelvin, Committee Chair

University of California, Los Angeles

2018

I dedicate this work to my father, Dr. William I. Lewis, who taught me to think critically, live bravely, and find humor in most situations.

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LIST OF ABBREVIATIONS

Archives in Turkey:

Başbakanlık Osmanlı Arşivi (BOA)

SALT Araştırma (SALT)

Atatürk Kitapliği (AK)

Archives in Switzerland:

International Telecommunication Union Library and Archive (ITU)

Archives in the United Kingdom:

Telegraph Museum Porthcurno (POR)

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During the seven years that I have been working toward my PhD, I have adopted many metaphors to describe my dissertation. Some weeks, it has been a steadily growing sapling; at other times, it has been an unwieldy load that I could neither grasp nor put down. But as I finish this project, I increasingly view my dissertation as a long-anticipated, yet never-guaranteed harvest. It has required hard work, community support, good luck, and a great deal of faith that the years of hidden growth would ultimately bear tangible fruits.

Part of this feeling stems from the fact that my plan to write a dissertation nearly combusted as soon as it began. During my first week as a graduate student at UCLA, I was diagnosed with advanced Hodgkin's Lymphoma. Stunned by the news, I nonetheless decided to continue with the program. I brought my readings to the bi-weekly chemo sessions and attempted to think big about my dissertation project, even as I was unable to plan more than a week at a time. When my tumors proved resistant to the initial treatment, I began to have doubts about my decision. Dissertations are long, arduous journeys; they are not for the faint of heart, nor for those with limited time. I was also pursuing a doctorate because I wanted to be a professor, a career that has a long runway before takeoff. As my 5 year survival chances dwindled from 80, to 60, and then to 50 percent, I started to question what I was doing; why was I investing precious time and energy into a project and a career that I might never see the end of?

Somehow, I decided to keep at it. Not because I was gripped with some insatiable desire to understand what made the late Ottomans tick, or because I couldn't think of anything else to do. I persevered simply because I continued to find meaning, and personal growth, in my development as a historian and scholar of the Middle East. My experience as a cancer patient left

me with a nagging interest in the role of science and technology in shaping the human condition, and the shortage of such scholarship in modern Middle Eastern History gave me a renewed sense of purpose. But the real reason I was able to keep going was because I was surrounded by an incredible community that provided support, guidance, and many helping hands along the way.

First I want to thank my advisor, James Gelvin, for his unwavering support, steady guidance, and thoughtful feedback throughout the years. The more I grow as a historian, the more I realize how little I knew when I started the program, and I will be eternally grateful that he took a chance on me and helped me find my voice as a scholar and writer. He has profoundly shaped how I think, write, and teach, and if I have learned anything about the study of history, it is because I was his student. I am also deeply indebted to Sarah Stein, who I was fortunate to gain as a committee member through a twist of fate. Her brilliance as a scholar is matched only by her warmth and dedication to her students, and I am very grateful to have worked with her over the years. M. Norton Wise, a man who embodies his surname, was a welcoming ambassador to the intimidating world of the History of Science, and it is largely because of his encouragement and support that I was able to write a dissertation that dabbled across disciplinary boundaries. I am also fortunate to have worked with John Agnew, whose enthusiasm for thinking critically about the world—and critiquing how we think about it—has helped me to grow immensely as a historian. I couldn't have dreamed of a better committee, and I am grateful for all of the letters written, feedback given, and encouragement offered along the way.

I also want to thank the UCLA History Department for supporting me in my training. In particular, I want to thank Hadley Porter, Eboni Shaw, Kamarin Takahara, and Monica Hean for looking out for me and for guiding me through the various administrative mazes I encountered at one time or another. My graduate career, research, and dissertation were made possible with the

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VITA

Education

2014	C. Phil., History University of California, Los Angeles Los Angeles, CA
2014	M.A., History University of California, Los Angeles Los Angeles, CA
2007	B.A., History University of Michigan, Ann Arbor Ann Arbor, MI

Fellowships

2016-2017	Harvard University, Department of the History of Science Visiting Fellow
2016-2017	UCLA Graduate Division, Dissertation Year Fellowship
2015-2016	American Research Institute in Turkey Research Fellow
2014-2015	UCLA History Department, Pre-Dissertation Fellowship
2014-2015	UCLA International Institute, Graduate Student Fieldwork Fellowship
2012-2013	Foreign Language and Area Studies (FLAS) Fellowship, Turkish
2012	UCLA Graduate Summer Research Mentorship Award
2007-2008	Fulbright U.S. Student Fellowship, Egypt
2007	Ernest T. Abdel-Massih Award for Excellence in Arabic University of Michigan

Presentations

October 2018	"Entangled: The Role of Private Capital in Ottoman Submarine Telegraphy," Society for the History of Technology Annual Meeting, St. Louis
May 2018	"Telegraphing Violence: The Role of Telegrams in the Armenian Genocide and its History," Public Talk at UC Santa Cruz Holocaust Studies Program
November 2017	"The Eastern Telegraph Company and Ottoman Telegraphy," Middle East Studies Association Annual Meeting, Washington, DC
March 2017	Poster Presentation, "Globalization of Science in the Middle East and North Africa," College of the Holy Cross
February 2017	"Telegraphy and New Conceptions of Space and Time in the Ottoman Empire," Modern Science Working Group, History of Science Department, Harvard University
November 2016	"Transcendent Electricity: Telegraphy and Information Boundaries in the Ottoman Empire," Middle East Studies Association, Boston.
April 2016	"The Ottoman Empire and the International Telegraph Union: Performing Equality through Practicing Expertise," *Expertise from Margin to Center Conference*, Columbia University
September 2014	"Building Modernity: A Microhistory of a Late Ottoman Engineer," *Muslims Negotiating Modernities Workshop*, Vanderbilt University
February 2013	"Equity not Equality: The Gender Discourse of an Egyptian Activist," *Thinking Gender Conference*, UCLA Center for the Study of Women

INTRODUCTION

In the winter of 1861, an Englishman by the name of Arnold Burrowes Kemball rode on horseback from Istanbul to Baghdad, touring the full length of the newly-constructed telegraph wire that connected the two cities. He was one of a few British military officers employed by the Ottoman government to supervise the building of the mammoth line, which stretched nearly thirteen hundred miles over rugged terrain. At a pace of nearly eighteen miles a day, Kemball followed the line as it rose over mountains and crossed ravines, stopping periodically to examine its integrity and quality.[1] He measured the spacing between the fir- and oak-wood poles, tested the electrical resistance of the iron wires, and counted the number of broken porcelain insulators.

Upon reaching the city of Diyarbakir on the Tigris River, Kemball recorded that the station was in good order but that there was something unusual about the placement of the wires. Rather than propping the telegraph wire on wooden poles, as was custom, the Ottoman laborers had taken advantage of the city's ancient infrastructure to support the modern technology. Suspended from the enormous city gates and stapled to the black stone walls, the telegraph wire snaked its way in and out of the city, connecting it to the imperial capital and the outside world.[2] Within two decades, the Diyarbakir station would become one of the 550 telegraph stations in the empire, and part of a network that circulated more than four million telegrams each year.[3] The Ottomans, it would seem, were fusing this new technology to their very foundation.

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[1] Frederic John Goldsmid, *Telegraph and Travel, Telegraphic Communication between England and India*. (London: Macmillan & Co, 1874), 81

[2] POR DOC/IETC/3.1, No. 1, Colonel Kemball Memorandum, March 1861

[3] *Posta ve Telgraf Mecmuasi*, August and September 1888

For a polity that was born in the fourteenth century, the Ottoman telegraph network was a striking symbol of the empire's transformations in the modern age. The emergence of the network in 1855 marked the beginning of a new era of electrical communication for the empire, one which offered new possibilities for sending orders, information, and rumor throughout and across Ottoman territory. Messages that had taken days or even weeks to travel now took minutes, and as suggested by the troves of telegrams in the Ottoman archives, the technology became a foundational part of governmental, military, and business communications from the 1860s until the empire's dissolution after World War One.

The telegraph itself was a rather simple technology. Meaning "writing from a distance," the term telegraph now refers almost exclusively to electrical telegraphy, an innovation that emerged in both the United States and in Great Britain in the 1830s and 40s. While there were a variety of telegraph machines, the basic concept was that two distant points could be connected by a wire, and that an electrical signal sent along that wire could convey a message. With the Morse telegraph machine, this message was conveyed through the adoption of a shared code—known as Morse code—in which the letters of the alphabet were represented by a series of dots and dashes. As a message moved through the network, it passed through the hands of dozens of operators who were responsible for ensuring the swift and accurate re-transmission of the electrical communication. At the end point, the message—known as a telegram—was transcribed into a physical note and delivered to its recipient.

While understanding the mechanics of the telegraph is relatively straightforward, determining the role of the technology in Ottoman society is more challenging. Historians of the empire frequently cite telegraphy as one of the hallmarks of Ottoman transformation in the modern era, but most references are cursory and few scholars have critically engaged with the

technology itself. Instead, the telegraph network lurks in the background of the empire's modern history, standing as part of the landscape of Ottoman society but not as a subject of interest in its own right. In a sense, the Ottoman telegraph network functions as a black box in modern Ottoman historiography: a complex social and technical network whose inner workings are overshadowed by its notable outputs, such as the ability of Ottomans to participate in global intellectual networks, the urbanization of population centers, and the projection of Ottoman state power into the periphery.[4] This "black boxing" of the telegraph erases the internal dynamics of the Ottoman network and flattens it into a prepackaged, discreet communications tool that was simply plugged into the empire. As a result, the telegraph emerges as a technology that enabled the Ottoman state and its subjects to communicate rapidly, but one that was largely separate from Ottoman society and culture.

However, as historians of science and technology have demonstrated, it is impossible to cleanly separate technology and society.[5] They are bound together in a muddled bricolage of

[4] For more on the act of "black boxing" and the importance of opening black boxes, see Bruno Latour, *Pandora's Hope: Essays on the Reality of Science Studies.* (Cambridge: Harvard University Press, 2000); and Bruno Latour, *Science in Action: How to Follow Scientists and Engineers through Society* (Cambridge: Harvard University Press, 1987). On the vibrant network of intellectual exchange between communities in the Middle East and around the globe, see: Ilham Khouri-Makdisi, *The Eastern Mediterranean and the Making of Global Radicalism, 1860-1914*. (Berkeley: University of California Press, 2010) and Stacy Fahrenthold, "Transnational Modes and Media: The Syrian Press in the Mahjar and Emigrant Activism during World War I." Mashriq & Mahjar: Journal of Middle East Migration Studies 1, no. 1 (Spring 2013): 32-57. On the transformation of Ottoman cities, see Jens Hanssen, *Fin de Siecle Beirut: The Making of an Ottoman Provincial Capital* (New York: Oxford University Press, 2005); Murat Gul, *The Emergence of Modern Istanbul: Transformation and Modernization of a City* (London: I.B. Tauris, 2009) and Zeynep Celik, *The Remaking of Istanbul: Portrait of an Ottoman City in the Nineteenth Century.* (Seattle and London: University of Washington Press, 1987). On the projection of Ottoman state power into the periphery, see Eugene Rogan, *Frontiers of State in the Late Ottoman Empire: Transjordan, 1850-1921* (Cambridge: Cambridge University Press, 1999); Thomas Kuehn, *Empire, Islam, and Politics of Difference: Ottoman Rule in Yemen, 1849-1919* (Boston: Brill, 2011)

[5] The effort to understand the complex interaction between technology and society has in fact given rise to a new discipline: Science, Technology, and Society (STS) Studies. Emerging in part out of debates regarding the degree to which science and technology are socially-constructed, this interdisciplinary field analyzes how scientific knowledge and technical systems are connected to social formations and practices, whether political, cultural, or economic in nature. Major works in this field include David Bloor, *Knowledge and Social Imagery* (London, Routledge & Kegan Paul, 1976); Wiebe Bijker, Thomas P. Hughes, and Trevor Pinch, eds., *The Social Construction of Technological Systems* (Boston: MIT Press, 1987); Bruno Latour, *Reassembling the Social: An Introduction to*

social and technical components, as humans invent, use, and discard technologies, and technologies expand and constrain possibilities for their users. Despite previous theories of modernization and technological diffusion, technology can neither be thought of as being divorced from the society in which it operates, nor can it be believed to be applied and understood consistently regardless of its location. This point has been particularly important in studying the history of modern technologies in non-Western contexts, including the Ottoman Empire, as there previously has been a tendency to view the technologies of trains, telegraphs, and electrical grids as the trusty vanguards of modernity, penetrating traditional societies and spreading everything from democracy to secularism to capitalism.[6]

This dissertation examines the social and cultural implications of the Ottoman telegraph network in an attempt to understand the place of the technology in the transformations that occurred in the empire during the second half of the nineteenth century. From its origins in the 1850s, the Ottoman telegraph system grew into a complex network of both human and non-human actors that extended beyond the borders of the empire. The vast network of cables needed skilled telegraphers to send and receive messages, new laws and mentalities for protecting the infrastructure, and new imaginaries for a world in which distance was seemingly annihilated. It

Actor-Network Theory (Oxford: Oxford University Press, 2005); John Tresch, *The Romantic Machine: Utopian Science and Technology after Napoleon.* (Chicago: University of Chicago, 2012); Sheila Jasanoff, *States of Knowledge: The Co-Production of Science and Social Order* (London: Routledge, 2004)

[6] For classic examples of modernization theory in the Middle East and Ottoman context, see Daniel Lerner, *The Passing of Traditional Society: Modernizing the Middle East* (New York: Free Press, 1958); Niyazi Berkes, *The Development of Secularism in Turkey* (Montreal: McGill University Press, 1964); Bernard Lewis, *Emergence of Modern Turkey* (Oxford: Oxford University Press, 2002); Stanford J. Shaw, "Some Aspects of the Aims and Achievements of the Nineteenth-Century Ottoman Reformers," in *Beginnings of Modernization in the Middle East,* eds. William R. Polk and Richard L. Chambers (Chicago: University of Chicago Press, 1968). For works that have challenged the diffusion model of technology, see David Arnold, *Science, Technology, and Medicine in Colonial India* (Cambridge: Cambridge University Press, 2000), Timothy Mitchell, *Rule of Experts: Egypt, Techno-Politics, Modernity* (Berkeley: University of California Press, 2002); On Barak, *On Time: Technology and Temporality in Modern Egypt* (Berkeley: University of California Press, 2013); and Begum Adalet, *Hotels and Highways: The Construction of Modernization Theory in Cold War Turkey* (Stanford: Stanford University Press, 2018)

also required foreign capital and an assimilation of Ottoman bureaucratic and technical practices into a global telegraph system governed by the British Empire. As a result, the telegraph was more than a mere tool of communication; it was also a mode for specific practices and discourses that were unique to modernity as it emerged in the empire. In particular, the building of telegraphic infrastructure contributed to four striking aspects of Ottoman modernity: the development of territorial sovereignty, the rising ethos of technocratic authority, the interdependence of the Ottoman state with private, foreign companies; and new conceptions of time and space among Ottoman citizens.

In order to uncover these new discursive and material practices that accompanied the Ottoman telegraph networks, this dissertation uses as a starting point the premise that technologies and their human inventors, operators, and users share a co-constructive relationship. This holds that Ottoman society and the telegraph mutually shaped and informed each other, producing new cultural, political, and economic formations that were at once social and technical. As a result, this "sociotechnical" framework not only captures the real role of the telegraph in Ottoman social transformation, but it also resists reductive narratives of either technological or social determinism in that history.[7]

In addition to being a story that is both social and technical, the history of Ottoman telegraphy is also one that is simultaneously imperial and transnational. On one hand, it can be said that the foreign technology was fully indigenized and incorporated into the local context: the

[7] The intellectual effort challenging the supposed division between the "social" and the "technical" came from a number of fronts. See Michel Callon, "Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St Brieuc Bay," in *Power, Action and Belief: A New Sociology of Knowledge,* edited by John Law (London: Routledge & Kegan Paul, 1986); Callon, The Sociology of an Actor-Network: The Case of the Electric Vehicle. In *Mapping the Dynamics of Science and Technology,* eds. Michel Callon and John Law (Palgrave Macmillan, London, 1986); and Bruno Latour, *Science in Action: How to Follow Scientists and Engineers through Society* (Cambridge: Harvard University Press, 1987); Wiebe E. Bijker, *Of Bicycles, Bakelites, and Bulbs: Toward a Theory of Sociotechnical Change* (Cambridge: MIT Press, 1995); Wiebe E. Bijker and John Law, eds., *Shaping Technology/Building Society: Studies in Sociotechnical Change* (Cambridge: MIT Press, 1997)

Ottoman government exercised almost total control over the technology, Ottoman actors built and operated the equipment, and the many languages of Ottoman society flowed over the lines.[8] Ottoman actors used the telegraph in accordance to their own needs, and imparted meaning to it in accordance to their local cultures, thereby rendering the technology's overseas provenance to be of little consequence. It is true that the telegraph had foreign origins, but so did gunpowder, the compass, and hundreds of other imported technologies that had seamlessly become part of Ottoman society.

On the other hand, as the technology entered Ottoman society, it tightened connections between the empire and the surrounding world. In part, this was a result of the technology's defining trait: regardless of its location, the technology enabled the instantaneous transfer of information and thereby introduced a new way for humans to understand physical limits. Ottoman culture and social context played a role in mediating these new understandings, but there was a commonality to telegraphic exchanges that existed in all societies where the technology was present. This link with the outside world also had to do with the network aspect of the technology. Ottoman telegraphy grew alongside an expanding global web: the empire was a founding member of the International Telegraph Union, which sought to coordinate and standardize telegraphic practice across borders, and British private and state actors were deeply involved in the Ottoman network, which represented a strategic and lucrative site for telegraphic operations. As a result, Ottoman telegraphy was in part governed and shaped by forces beyond the empire.

A broad overview of the development of the telegraph in the empire illustrates how critical it is to balance both the social and technical, as well as the imperial and transnational, in

[8] Telegrams in the Ottoman network could be sent in Turkish, Arabic, Armenian, Greek, English, and French.

reconstructing the history of the Ottoman telegraph network. The telegraph came to the empire during a time of great social and political change, a period known collectively as the *Tanzimat.* During this period, imperial power became centralized and rationalized, the economy became more incorporated into the world market, and the imperial elite began to look toward Europe as a social and political model. It was also a period of crisis and redefinition, as the state sought to assert control in the restive Balkans, brace against an expanding Russian Empire, and partner with western European powers who feared that Ottoman collapse would throw the continent's delicate balance of power.

In fact, the first telegraph lines in Ottoman territory emerged as a byproduct of the war-time needs of the Ottoman, British, and French forces during the Crimean War (1853-1856). Built in the early spring of 1855 through a combined effort between the Ottoman government, the British and French militaries, and British capital, an underwater cable connected the Crimean peninsula to the Ottoman coastal city of Varna, and newly built land lines connected the station at Varna to both the nascent European network and to the Ottoman capital of Istanbul.[9] A few months after the completion of the Balaklava-Varna line, the Ottoman government completed construction on its own telegraph lines, with the assistance of French engineers.[10] The completion of the Istanbul-Edirne line in September 1855 marked the first line that was fully managed by the Ottoman government, and the beginning of a new era of technical responsibility for the Ottoman state.

[9] See Ken Beauchamp, *History of Telegraphy* (London: The Institution of Electrical Engineers, 2001), 107 and 145; Roderic Davison, "The Advent of the Electric Telegraph in the Ottoman Empire," in *Essays in Ottoman and Turkish History, 1774-1923: The Impact of the West* (Austin: University of Texas Press, 1990), 134-136

[10] Dwayne R. Winseck and Robert M. Pike, *Communication and Empire: Media, Markets, and Globalization, 1860-1930* (Durham: Duke University Press, 2007), 30

During the second half of the nineteenth century, the Ottoman telegraph administration, often in partnership with foreign companies and in coordination with foreign states, developed the telegraph network within the empire. It was an uneven, patchy process that was motored both by the needs of the Ottoman state as well as the interests of the British, who viewed Ottoman telegraphy as a means for imperial and commercial communication between Europe and South Asia. For instance, the Ottoman state initially focused on developing lines in the European (*Rumeli*) provinces, which were the heartland of the Ottoman economy. By 1873, these provinces had 164 stations, approximately the same number as those present in the much larger territory of Anatolia and the Arabic-speaking provinces of the Levant and Mesopotamia. [11] However, even as the early network was centered on the European provinces, one of the empire's first lines was the massive Istanbul-Baghdad wire (1861) which was built in part to satisfy British commercial and imperial parties interested in Indo-European communication. By the 1890s, the Ottoman network was more evenly developed and included nearly every population center in the empire. Istanbul, Salonica, and Edirne boasted the busiest telegraph stations in the empire, closely followed by Aydin, Sivas, and Baghdad.[12]

Throughout the empire, the Ottoman telegraph network emerged largely independent from the much smaller and less sophisticated rail network, allowing for an unusual circumstance in which state officials and ordinary individuals could communicate with, but not necessarily access, remote areas such as the Arabian Hijaz, Eastern Anatolia, and Tripolitania. As late as 1911, the ratio of rail-lines to telegraph-lines in the empire was 4,030 miles of track to 26,720

[11] This number comes from the 1873 map created by the Ottoman Telegraph Administration. Original is located in the map collection of the International Telecommunication Union Archive, Geneva, Switzerland.

[12] According to the imperial report, the network's largest districts in terms of the number of telegraph employees was as follows: Istanbul (559), Salonica (325), Aydin (271), Edirne (241), Baghdad (240), Sivas (217), Janina (214). See AK ISTKA/2012/BIL/233, No. 8 *Telgraf ve Posta Estatisque,* 1316 (1900)

miles of wire.[13] In another important distinction, the Ottoman telegraph network was predominately a state-run enterprise, whereas the rail network was a conglomeration of privately owned and managed lines.[14]

The new telegraphic infrastructure was accompanied by new social institutions and practices. In the early years of Ottoman telegraphy, from 1855-1871, a high telegraph commission (*telgraf komisyon-ı âlisi)* managed telegraphic operations in the empire, all while being housed within the Ministry of the Interior. In 1871, the telegraph commission merged with the Ottoman postal administration to form a new body, the Postal and Telegraph Ministry (*Posta ve Telgraf Nezareti),* an administrative union that would continue until the end of the empire.[15] While this ministry was one of the many new bureaucratic institutions that emerged during this time of administrative reform, it was unique in one important way: the majority of its personnel were technicians as well as bureaucrats, having been trained in the science and practice of telegraphy.

This corps of telegraphers emerged as the backbone of the imperial telegraph network. While the first class of Ottoman telegraphers came predominately from the translation office of the Sublime Porte, which ensured a degree of multilingualism, telegraphic training quickly became its own specialty. The telegraph administration established a telegraph school in 1861,

[13] The rail statistic comes from Donald Quataert, *The Ottoman Empire, 1700-1922* (Cambridge: Cambridge University Press, 2000), 121. The telegraph statistic comes from *L'Union Telegraphique Internationale (1865-1915)* (Berne: International Telegraph Union, 1915)

[14] On the history of railroad concessions in the empire, see Charles Issawi, *The Economic History of Turkey 1800-1914* (Chicago: University of Chicago, 1980); Roger Owen, *The Middle East and the World Economy*, 1800-1914 (New York: I.B. Tauris, 1993); Murat Özyüksel, *The Berlin-Baghdad Railway and the Ottoman Empire: Industrialization, Imperialism, Germany and the Middle East* (New York: I.B. Tauris, 2016)

[15] Mustafa Kaçar, "Osmanli Telgraf Idaresi'nin Kurulmasi ve Ilk Telgraf Sebekesi," in *Cagini Yakalyan Osmanli! Osmanli Devleti'nde Modern Haberlesme ve Ulastirma Teknikleri*. eds. Ekmeleddin Ihsanoglu and Mustafa Kaçar (Istanbul: Osmanli Bankasi Kutuphanesi, 1995), 51

and the Istanbul high schools of Galatasaray and Darusufaka also introduced curricula that would prepare young men—and only men—to go into the profession. While technical training eventually took priority over language capability, the latter would always remain a necessary skill for Ottoman telegraphers: In his daily duties, an Ottoman telegrapher could expect to encounter messages in a multiplicity of languages (primarily French, Turkish, and English) and at least two primary scripts (Latin and Arabo-Persian). As a result, Ottoman telegraphers were responsible for knowing two Morse codes: one for the Latin alphabet, and one for the Arabo-Persian alphabet.[16] He was also responsible for handling government messages, commercial messages, and personal correspondences, all of which were sent, one letter at a time, over the wires.

By the 1890s, there were approximately 2,000 telegraphers stationed throughout the empire's twenty-five telegraph districts.[17] While the borders and number of these districts changed over time, they were typically larger in geographic scope than the administrative subdivisions used for imperial governance. For instance, while Mosul, Baghdad, and Basra were each their own vilayet (province), their telegraphic operations were all managed by the Baghdad telegraph directorate.[18]

There were other actors in the world of Ottoman telegraphy. During this same period, the administration also employed another 1,300 individuals throughout the empire to guard the

[16] Izzet Bey, an Ottoman telegrapher, is credited with creating a Morse code for the Arabo-Persian alphabet used in Ottoman Turkish. First developed in 1877, it was eventually adopted throughout the Ottoman telegraph system for messages in Ottoman Turkish, Arabic, and Persian. See Nesimi Yazıcı, "Osmanlı Telgrafında Dil Konusu," *Ankara Üniversitesi Ilahiyat Fakültesi Dergisi,* C. XXVI, Ankara, 1983,763

[17] AK ISTKA/2012/BIL/233, No. 8, *Telgraf ve Posta Estatisque,* 1316 (1900)

[18] SALT 384/Tel/C/1, No. 1, Telgraf ve Posta Nezareti Saltanat-ı Seniye-ı Telgraf Merakizine Mahsus Resmi Rehberdir, August 1905.

enormous network of lines and to monitor them for repair.[19] An additional 1,000 men were hired as deliverymen and runners to deliver the physical telegrams. While the administration primarily imported telegraphic material—such as cables and machines—from western Europe, small-scale factories also emerged in Istanbul in order to support telegraph operations.[20] There were also a handful of foreign submarine cable companies that operated the lines that lay beneath the empire's waters. Working closely with the Ottoman telegraph administration, these companies represent an anomaly in what had largely become a state-run operation. Lastly, Ottoman subjects who could afford the expensive technology used it in personal correspondence and commercial ventures; those who could not nonetheless experienced the technology as it laced the countryside, cluttered urban landscapes, and circulated news of distant happenings.

As this dissertation shows, Ottoman telegraphy was as much about these individuals who operated, used, and imagined the lines as it was about the machines and wires themselves. There are two primary points to my argument. First, the development and daily operation of telegraphic infrastructure contributed to practices and discourses associated with new forms of governance in the empire, specifically territorial sovereignty and technocratic authority. The Ottoman state's decision to build and manage a telegraph network that was both locally grounded and internationally connected required the Ottoman state to perform new functions, such as maintaining remote sections of infrastructure and cultivating a corps of telegraphers who were knowledgeable in the "universal" science of telegraphy. As a result, the legitimacy of the Ottoman state became increasingly tied to its ability to control and operate technical

[19] AK ISTKA/2012/BIL/233, No. 8, *Telgraf ve Posta Estatisque,* 1316 (1900)

[20] Tanju Demir, *Turkiye'de Posta Telgraf ve Telefon Teskilatinin Tarihsel Gelisimi* (1840-1920) (Ankara: PTT Genel Mudurlugu, 2005), 63

infrastructure in its domains, an association that was based on the tangible as well as the symbolic value of technology to the functioning of the modern state.

Second, the network also acted as a site for the empire's participation in the globalization of the late nineteenth century, which was in part defined by the transnational reach of British capital and the new epistemic framework offered by electrical communication. For while the Ottoman state sought to establish the telegraph network as a site of state control, it was nonetheless compelled to work closely with British companies to manage the submarine cables that connected the empire's far-flung territories. As a result, the telegraph network ensured that the expanding authority of the Ottoman state was partially attached to the financial power and work practices of private, foreign actors, particularly the Eastern Telegraph Company, which held a monopoly over the world's submarine cables. This Ottoman participation in a globalized system of British infrastructure and technical norms was mirrored by a related development: the emergence in the empire of a global telegraphic episteme that brought with it particular possibilities for imagining time and space. These new physical boundaries, which were consistent throughout the globe where telegraphy was present, mixed with dynamics that were particular to the Ottoman context to create new temporal and spatial concepts that can be understood as "local vernaculars" of a global discourse of modernity.[21]

In writing a sociotechnical history of Ottoman telegraphy, this dissertation enriches the small body of work devoted to understanding the dynamics and the significance of the telegraph network in the empire. While a number of works have established the basic history of the Ottoman network—including its origins, expansion, and overall functioning—these histories are restricted in both size and scope. All are article-length pieces, and nearly all are restricted to the

[21] James L. Gelvin, *The Modern Middle East: A History* (New York: Oxford University Press, 2011), 3

political motivations behind the development of the network, approaching the telegraph as a discreet tool of political control either for the Ottoman authorities or for foreign powers.

The most comprehensive work remains Roderic Davison's essay on the topic, which provides a useful introduction to the history of the telegraph in the empire and its role in the centralization of Ottoman state power. As indicated by its inclusion in a larger collection of essays regarding the "Impact of the West" on the empire, this study approaches the telegraph as one of the many tools of modernity that, once adopted, helped to unleash the forces of modernization in the empire. Eugene Rogan's work on the telegraph complemented and complicated Davison's narrative of centralization by claiming that the telegraph should be seen as a two-way channel of communication: the technology not only allowed for more standardized, invasive, and centralized imperial rule, but it also provided individuals in distant provinces with a direct means to issue demands to the imperial center.[22]

Scholarly fixation on the telegraph as a tool of political power is even more present in works that examine the role of foreign powers and companies in the development of the Ottoman network. Articles by Soli Shahvar and Mostafa Minawi shed light on Ottoman concerns over maintaining control of telegraphic infrastructure, even as the state partnered with British actors in order to expand the network.[23] While revealing important details in the story of Ottoman telegraphy, these articles continue to approach the technology as a pre-packaged tool that was

[22] Eugene Rogan "Instant Communication: The Impact of the Telegraph in Ottoman Syria," in *The Syrian Land: Processes of Integration and Fragmentation.* Edited by Thomas Philipp and Birgit Schaebler (Stuttgart: Steiner, 1998), 113-128.

[23] Mostafa Minawi, "Telegraphs and Territoriality in Ottoman Africa and Arabia during the Age of High Imperialism," in *Journal of Balkan and Near Eastern Studies* 18, no. 6 (2016): 567-587; Soli Shahvar. "Tribes and Telegraphs in Lower Iraq: The Muntafiq and the Baghdad-Basrah Telegraph Line of 1863-65," in *Middle Eastern Studies* 39, no. 1 (2003): 89-116.

merely deployed in the service of increasing power, whether belonging to the Ottoman state or imperial actors.

This narrow lens fails to capture the co-constructive nature of social and technological change in Ottoman history, leaving the impression that the technical network was somehow separate from the rest of Ottoman society. This conclusion is problematic for any analysis of technology in society, but it is especially troublesome in Middle Eastern history, given the long-standing assumptions about Muslim societies as inherently estranged from modernity. For instance, it is difficult to imagine any work of American or European history treating the technologies of rail or telegraphy as somehow exterior to the rest of society. This is because in the Western context, technological transformation is viewed as integral to the changing social fabric of the modern era. In contrast, in Ottoman and Middle Eastern history, the history of modern technology is either entirely compartmentalized—a side show to the main event—or it is treated as an exogenous force that independently acts upon the society. In both scenarios, there is a problematic boundary between what is deemed to be "society" and what is deemed to be "technology."

In moving beyond this view of technology as discreet and separated from society, this dissertation contributes to the growing corpus of histories devoted to investigating the social and cultural significance of the infrastructures and technologies of modernity in the Middle East. This "material and technology" turn, as On Barak put it, has helped to fill a lacuna in modern Ottoman and Middle Eastern historiography, which hitherto had remained relatively silent on the role of the industrial technologies of communication, transportation, and production in shaping the physical and imaginative landscape of the region.[24] While addressing a range of topics, from

[24] On Barak, "Review of Global Muslims in the Age of Steam and Print, by James L. Gelvin and Nile Green," in *American Historical Review* 120, no. 1 (February 2015): 360-361.

the Suez Canal to changing temporalities, these works are united in their collective agreement that modern technologies must be understood as complex networks—constituted of both social and technical actors—and that they extend beyond cultural, linguistic, or political boundaries.[25] This approach has enabled scholars to reveal both the particularities of modernity as it was experienced by different societies (thus revealing the existence of *modernities*) as well as the emergence of global, shared epistemes that were connected to the new material frameworks offered by the technologies of steam, electricity, and print.

By examining the sociotechnical history of the Ottoman telegraph network, this dissertation also engages with studies that examine the global history of telegraphy. While scholars like Simone Müller, Roland Wenzlhuemer, and Daniel Headrick have analyzed the relationship between the global network and imperialism, internationalism, and borderless capitalism, these studies overlook Ottoman infrastructure and Ottoman telegraphic culture.[26] This absence is striking given both the size of the network—it was among the world's largest—and its noteworthy status as one of the few networks that was managed by non-Western administrators. By incorporating the Ottoman experience into the larger story of telegraphy, this study both widens our understanding of the diversity of the technology's application, and makes the historiography of the technology more reflective of its global past.

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[25] Major works include James L. Gelvin and Nile Green, *Global Muslims in the Age of Steam and Print* (Los Angeles: University of California Press, 2014); On Barak, *On Time: Technology and Temporality in Modern Egypt.* (Los Angeles, University of California Press, 2013). Avner Wishnitzer, *Reading Clocks, Alla Turca: Time and Society in the Late Ottoman Empire* (Chicago: University of Chicago Press, 2015); Valeska Huber, *Channeling Mobilities: Migration and Globalisation in the Suez Canal Region and Beyond, 1869-1914* (Cambridge: Cambridge University Press, 2015); Fredrik Meiton, "Electrifying Jaffa: Boundary-Work and the Origins of the Arab-Israeli Conflict," Past & Present 231, no. 1 (May 2016): 201-236.

[26] Simone M. Müller, *Wiring the World: The Social and Cultural Creation of Global Telegraph Networks* (New York: Columbia University Press, 2016); Roland Wenzlhuemer, *Connecting the Nineteenth-Century World: The Telegraph and Globalization* (Cambridge: Cambridge University Press, 2013); Daniel Headrick, *The Invisible Weapon: Telecommunications and International Politics, 1851-1945* (Oxford: Oxford University Press, 1991)

Outline of Study

This work focuses on the history of Ottoman telegraphy from its inception in 1855 during the Crimean War to the beginning of the Italo-Turkish War in 1911, an event that marked the beginning of nearly a decade of war that culminated with the empire's dissolution. While the Ottoman telegraph network continued through this period of tumult—and arguably, on in the telegraph systems of the empire's successor states—the bookend of 1911 serves as a useful endpoint for this study, given the special attention that these conflicts merit. The combination of territorial loss, which dramatically contracted the telegraph network, and the adoption of war-time measures in Ottoman bureaucracy make this period difficult to include in a broader history of the network. By focusing on the first five decades of the Ottoman network, this study captures and analyzes the experience of Ottoman telegraphy in its most generic sense, if such a term may be used.

The first chapter investigates the development of a class of state telegraphers who were responsible for managing the machines and shepherding electrical messages through the system. Specifically, it examines the efforts of the Ottoman state to cultivate telegraphic expertise and establish a corps of disciplined telegraphers capable of operating a technical system that was internationally connected and governed by universal standards. By analyzing the educational and employment practices of the imperial telegraph administration, as well as the ways in which Ottoman telegraphers participated in the international telegraph community, this chapter reveals the close connection between telegraphy and the concomitant trends of scientism and the idealization of discipline in late Ottoman society. Ultimately, the state-led effort to produce disciplined and expert telegraphers contributed to the emergent philosophy of technocratic authority: the notion that the modern empire should be governed by those who possessed

scientific knowledge and a work ethic appropriate for the industrial world. Sources for this chapter include the Ottoman telegraph administration's official journal, publications from the International Telegraph Union, educational curricula for the Ottoman telegraph school, and biographies of a number of Ottoman telegraphers.

Chapter two examines the ways in which the Ottoman telegraph network was connected to the practice and discourse of territorial sovereignty in the empire. This understanding of sovereignty, which continues to define modern geopolitics, was based on the principles of well-defined borders and the singular right of the Ottoman state to control activities within those borders. These principles were closely connected to the development of an imperial telegraph network that was both grounded in the local environment and embedded in an international system. From its inception, the Ottoman telegraph network was the subject of British interest, as it acted as a critical bridge between the telegraph networks in Europe and British India. Drawing on administrative maps, technical manuals, and diplomatic correspondence regarding Anglo-Indian traffic, this chapter analyzes the emerging Ottoman discourse and practice of territorial sovereignty, as Ottoman statesmen defended their right to managing telegraphic infrastructure in Ottoman territory in spite of British efforts to control this valuable network.

Chapter three investigates the role of British companies in building the undersea portions of the Ottoman telegraph network—a feat that the Ottoman government was unable to do alone. Drawing on actor-network theory, this chapter argues that submarine telegraphy prompted an entangled relationship between the Ottoman state and the Eastern Telegraph Company, whereby the privately-owned cables simultaneously strengthened the imperial telegraph administration's capabilities and forced it to conform to and engage with British technical and business standards related to telegraphy. By exploring the links between the Eastern Telegraph Company and the

expanding technical bureaucracy, this chapter offers a case study on the power and limitations of European capital in late Ottoman society and shows how telegraphic infrastructure bound together the public and private, and the foreign and domestic. Sources for this chapter include Ottoman state records from the imperial archive in Istanbul, as well as financial records, personal diaries, and contracts from the Eastern Telegraph Company archive in Porthcurno, UK.

Lastly, chapter four examines the role of telegraphy in the emergence of new conceptions of space and time in late Ottoman society. Specifically, it argues that telegraphy contributed to a sense that time and space were unstable quantities, continuously shifting despite efforts to regulate and standardize them. Drawing on literary, musical, and visual works from Turkish, Arabic, and Syriac sources, this chapter connects these imaginaries with larger political and social transformations occurring within the empire. While these new temporal and spatial concepts were connected to the unique circumstances of the empire, their overlap with the cultural response to telegraphy in Western societies indicates the emergence of a shared telegraphic episteme that undergirded both Ottoman and Western modernities. Sources for this chapter include Arabic and Ottoman Turkish poems; short-stories, novels, and songs; an illumination from a Syriac-Orthodox gospel book; and texts from the Ottoman imperial yearbooks (*salname*).

While the scope of this dissertation does not include the wars that marked the last decade of the empire, its conclusion does include a brief discussion on the role of the Ottoman telegraph network in the Armenian Genocide. The modern technology, which many Ottomans viewed as a tool of enlightenment and progress that would save the empire, was intimately involved in the vicious acts of state violence against Armenian citizens. Telegrams sent from Istanbul coordinated the en masse stripping of Armenians' rights, their forced relocation to the deserts of

modern Syria and Iraq, and even their deaths at the hands of state-sanctioned gangs. Not unlike the crucial role played by the German rail system in facilitating the horrors of the Holocaust, the Ottoman telegraph network helped the state to swiftly and methodically carry out one of the first genocides of the twentieth century. By offering new possibilities and constraints to Ottoman state and society, the sociotechnical network of the telegraph undergirded modernity as it emerged in the empire, in its grandest and most brutal forms.

If it is true that "history is the child of its time," as Fernand Braudel wrote, then it must be recognized that this work emerges during a time in which popular culture is see-sawing between optimism and pessimism regarding the role of technology in society.[27] In the span of a few years, the social media giant of Facebook has gone from being hailed as the liberator of autocratic Egypt to being booed as the Russian bogeyman that catapulted Donald Trump into the White House. Such glorification and demonization demands an enormous belief in the agency of technology, a worldview that effectively erases human actors from the picture. Perhaps through reconstructing the complex relationship between past technologies and societies, such as the Ottomans and their telegraph network, we will gain a clearer understanding that there is no pre-determined, guaranteed path between technology and its social and cultural effects. Whether such ambivalence is a source of inspiration or anxiety remains open for debate.

[27] Fernand Braudel, *On History* (Chicago: University of Chicago, 1980), 6

CHAPTER ONE
Disciplining Experts: The Roots of Technocratic Authority

> *It is not enough for a telegrapher to have a basic education or a few instructions. He should be able to understand the meaning and intentions of the telegram he receives. When sending a message, he must pay close attention so that the other side receives a clear, fast and readable telegram. He must know more than just the telegraph signals. He must also have the knowledge to inspect the galvanometer and the lines, and have an understanding of accounting and administrative matters.*[1]
>
> - Aziz Akincan, 1946

For Aziz Akincan, the work of a telegrapher was nothing short of extraordinary. In his flattering and fragmented writings about the profession, Akincan praised the unique combination of dexterity, technical knowledge, and bureaucratic skills that he believed set telegraphers apart. From their lapelled uniforms to their fastidious demeanor, Akincan viewed telegraphers as a special class with an important responsibility. He was hardly unbiased. Akincan served for more than three decades in the Ottoman and later Turkish telegraph corps, working primarily in the Edirne station where he served as station chief. If his memoir is to be believed, he manned the station at critical moments during the 1908 Revolution, the Balkan Wars, and World War I, passing on messages that shaped the historic developments of the empire's last decade.[2] Telegraphy also ran in his family: his father, Yusuf Fehmi Bey, was a telegrapher and was said to have been a mentor to Talaat Pasha, a telegraph clerk who would go on to become a powerful statesman.

While Akincan's writings are notably self-aggrandizing, his description of Ottoman telegraphers as a unique and significant class rings true. Indeed, the Ottoman telegraph network

[1] Aziz Akincan, *Turkiye'de Posta ve Telgrafciklik* (Istanbul: Ulku Basimevi, 1946), 5

[2] While Akincan does not list the exact dates of his career, his descriptions indicate that his service in the Ottoman telegraph corps began in the 1890s and continued until 1919.

was much more than just a series of cables, insulators, and batteries. Embedded in the technical system lay a human network: a new class of technical bureaucrats who were responsible for managing the machines and shepherding the electronic messages throughout the empire.

Take, for example, a message sent from Istanbul to Damascus. Whether the message was about a business transaction or a new birth, the operator would have quickly disaggregated the desired words into their comprising letters, sending each letter, one at a time, over the wire. With multiple relays in places such as Eskisehir, Konya, Adana, and Aleppo, the telegram would have passed through many ears and many fingers as it traveled toward its final destination. Once there, the final operator would transmute the electrical code back into text, and send the written telegram on to its ultimate recipient.

Thus, as much as Ottoman telegraphy depended on technology, it also hinged on the unique knowledge and practices of human operators. As remembered by Akincan, the work of a telegrapher required not only technical knowledge but also a particular set of habits. From Salonica to Basra, Ottoman telegraphers drew on a common understanding of telegraphic science to manage technical issues, and they employed a shared set of work practices to ensure uniformity throughout the network. As a result, the Ottoman telegraph network was more than a tool in the story of imperial centralization and economic integration: it was also a site where new state personnel practices emerged and where modern political ideologies gained steam. Specifically, as the Ottoman telegraph administration sought to indigenize and legitimize its telegraph network, it cultivated telegraphic expertise and disciplined telegraphers into a corps capable of operating a technical system that was internationally connected and governed by universal standards.

This chapter investigates these sociotechnical practices and places the development of a disciplined corps of telegraph experts within the larger story of late Ottoman transformation. By examining the organizational and employment practices of the Ottoman telegraph corps, as well as the ways in which its members participated in the international telegraph community, it reveals the close connection between Ottoman telegraphy and the concomitant trends of scientism and the idealization of discipline in late Ottoman society. Ultimately, the attempt to create disciplined telegraph experts contributed to an emergent philosophy of technocratic authority in the empire: the notion that modern Ottoman society, which relied on technical systems, should be governed by those who possessed scientific knowledge and a work ethic appropriate for the industrial world.

Cultivating Expertise and Disciplining Operators

The Ottoman effort to cultivate telegraphic expertise and discipline operators was in line with a general trend taking place within imperial power structures during the second half of the nineteenth century. The political crises of the early nineteenth century had shaken the imperial authorities, convincing many of the need for new forms of governance that would meet the challenges of the day, namely the twin threats of Russian invasion and internal secession movements. Beginning with the military reforms of Sultan Selim III (1789-1807), the Ottoman government began what would be a slow and uneven process of changing how the empire was governed and managed. Known collectively as the "Tanzimat," this diverse set of reforms ultimately led to the centralization of authority, the incorporation of Western forms of rationalization, and the expansion and professionalization of the state bureaucracy. While previous scholarship on the Tanzimat reforms approached these developments as the inevitable

transition from a traditional state to a modern government, recent scholarship has revealed not only the contingencies of the reforms, but also the ways in which the new practices were connected to the changing social and cultural milieu of the empire.[3] It was not entirely a story of top-down change—the forceful application of a foreign concept of rationalized, professional government. Instead, scholars have revealed the new bureaucratic configurations and behaviors to be the byproducts of industrial work practices, competition between social groups, and the economic peripheralization of the empire, rather than simply the intended results of deliberate policy.[4]

There was also a sociotechnical element to this transformation, and the practices of the Ottoman telegraph corps were in many ways emblematic of this. As telegraphic communication became a staple of nineteenth century commerce and statecraft, the Ottoman government's ability to operate the technology became critical for both managing the large empire and for demonstrating its fitness as a modern state. While foreigners operated the Ottoman lines for the first few years of the network, it was not long before the Ottoman government began to foster an indigenous corps of telegraphers. As a result, a new type of Ottoman bureaucrat emerged:

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[3] For scholarship on the reforms as a series of top-down directives, see Niyazi Berkes, *The Development of Secularism in Turkey* (Montreal: McGill University Press, 1964); Bernard Lewis, *Emergence of Modern Turkey.* (Oxford: Oxford University Press, 2002); Stanford J. Shaw, "Some Aspects of the Aims and Achievements of the Nineteenth-Century Ottoman Reformers," in *Beginnings of Modernization in the Middle East,* eds. William R. Polk and Richard L. Chambers (Chicago: University of Chicago Press, 1968).

[4] While they differ in their subject matter, the works of Christine Philliou and Alper Yalçinkaya both re-examine the Tanzimat reforms in light of friction between new and old social groups. See Christine M. Philliou, *Biography of an Empire: Governing Ottomans in an Age of Revolution* (Berkeley: University of California Press, 2010); Alper Yalçinkaya, *Learned Patriots: Debating Science, State, and Society in the Nineteenth Century Ottoman Empire* (Chicago: University of Chicago Press, 2014). For an examination of the role of new industrial work practices and temporalities, see Avner Wishnitzer, *Reading Clocks, Alla Turca*: *Time and Society in the Late Ottoman Empire* (Chicago: University of Chicago Press, 2015). For literature on the economic integration and peripheralization of the empire, see Huri Islamoglu-Inan, *The Ottoman Empire and the World Economy* (Cambridge: Cambridge University Press, 1987); Roger Owen, *The Middle East in the World Economy, 1800-1914* (New York: Methuen & Co, 1981); and Reşat Kasaba, *The Ottoman Empire and the World Economy: The Nineteenth Century* (Albany: SUNY Press, 1988)

technocrats who were simultaneously imperial officials and members of a global class that managed a transnational technical system.[5]

This process of creating a corps of expert and disciplined telegraphers began in 1861 with the establishment of the first telegraph school in the empire, *Fünun-i Telgrafiye Mektebi*. Initially, Ottoman students trained through a combination of studying abroad in western Europe, particularly Paris, and studying at the school in Istanbul under the guidance of European telegraph instructors. By 1871, the Ottoman telegraph corps was predominately composed of individuals who had been born in the empire, and by the first decade of the twentieth century, the administration had phased out the study abroad portion of its education and developed a centralized curriculum that was entirely based in Ottoman lands.[6]

Far from being a simple story of knowledge and technology transfer from Europe to Ottoman domains (known as the diffusion model of technology), the development of Ottoman telegraphic expertise hinged both on the marginalized position of the empire as well as the communal nature of scientific knowledge.[7] As the Ottoman telegraph system grew, telegraphic expertise not only became critical for the network's proper functioning, but it also became central to how the telegraph corps defined itself in relation to the rest of Ottoman society and the outside world. As Alper Yalçinkaya has shown, the Ottomans who trained in Western sciences—

[5] Best exemplified by the railway, technical systems marked a departure from previous technologies (described by some scholars as "artifacts") in that their utility depended on large assemblages: complex networks of human labor, permanent infrastructure, machines, expertise, and capital. See Renate Mayntz and Thomas P. Hughes *The Development of Large Technical Systems* (Frankfurt am Main: Campus Verlag, 1988).

[6] Ahmet Yuksel, "Sucluluk ve Sucsuzluk Arasina Osmanli Telgraf Memurlari," in *Uluslararasi Sosyal Araştimalar Dergisi* 7, no. 33 (August 30, 2014): 375

[7] David Arnold has criticized this diffusion model of the spread of technology, as it discounts the role of local contexts in determining the role of technology in society. See David Arnold, *Everyday Technology: Machines and the Making of India's Modernity* (Chicago: University of Chicago, 2015)

the self-proclaimed "men of science"—believed that their knowledge enabled them to steer the empire toward progress and revival in an age of European dominance. As the state came to endorse these practices, knowledge of the new sciences of electricity, magnetism, and chemistry—all of which were central to telegraphy—gained social currency, even if such knowledge was at times more performative than substantive.[8] By the turn of the twentieth century, the possession of universal telegraphic knowledge was not only critical for operating an interconnected technical system, but also for being considered an equal among the remaining empires of the world.

In addition to the cultivation of telegraphic expertise, the authority of the Ottoman telegraph corps also depended on new work practices that disciplined telegraphers into efficient, trustworthy, and orderly members of the network. There were a number of vulnerabilities to the technology that engendered a fixation on the behavior of operators. Telegraph machines had to be monitored at all times, and incoming messages had to be carefully and efficiently recorded in order to avoid errors and delay. Some scholars have even argued that the telegraph was one of the technologies that shaped the new, attentive culture of the mid-nineteenth century, a time when the new aesthetics and practices of industrial capitalism prompted fears of distraction and an idealization of concentrated attention.[9]

Backlogs, lost messages, and errors in transmission were a constant menace to telegraph systems around the world, but they were particularly troublesome for the Ottoman network,

[8] As Yalçinkaya notes, the detractors of these new elites often charged that these men of science did not truly understand Western science, and that they were content with the appearance of expertise. See Yalçinkaya, *Learned Patriots,* 2014

[9] Jonathan Crary, *Suspensions of Perception. Attention, Spectacle, and Modern Culture* (Boston: MIT Press. 1999), 30

which covered vast and difficult terrain.[10] In order to ensure that the human element of the network was as dependable as possible, the Ottoman telegraph administration implemented a number of practices to discipline telegraphers into effective operators. Telegraphers shared a fixed protocol for sending messages and for recording pertinent information regarding the communications. As products of a common training system and professional culture, operators were continuously transferred across different stations in the empire and largely treated as interchangeable. Disciplinary practices also included punishment for deviant behavior. In particular, the administration targeted carelessness (*dikkatsizlik* or *'adm dikkatlik)* among its operators, and docked the pay of telegraphers suspected of distorting or missing messages. As part of punishing operators, the administration even published the names of offenders and their transgressions in the official gazette of the Ottoman telegraph corps. Altogether, these professional practices resulted in the transformation of operators into what Michel Foucault described as "docile bodies:" individuals who, through acts of surveillance, training, and punishment, learned to self-correct and to behave in a desired and predictable pattern.[11]

These disciplinary practices were in line with the contemporary idealization of efficiency and productivity in late Ottoman society.[12] As Avner Wishnitzer has shown, the new regulations for monitoring and disciplining the behavior of Ottoman bureaucrats reflected a new approach to imperial administration, one in which impersonal output was emphasized over "scribal expertise."[13] Similarly, Melis Hafez has argued that new practices of discipline, particularly

[10] SALT 384/TEL/1893, No. 4, Telegraph Construction and Maintenance Manual, 1893

[11] Foucault, *Discipline and Punish: The Birth of the Prison* (New York: Vintage Press, 1995), 136

[12] The shift toward emphasizing punctuality and efficiency began at the end of the eighteenth century. See Carter Findley, *Bureaucratic Reform in the Ottoman Empire*, *The Sublime Porte*, 1789-1922 (Princeton: Princeton University Press, 1980)

[13] Wishnitzer, *Reading Clocks,* 49

those that targeted laziness and inefficiency, were part of a larger shift within Ottoman popular culture in which industriousness and productivity became moral questions.[14] Thus, while the disciplining of telegraphers was partially determined by the needs of the network, it was also part of the larger trend of surveilling bureaucratic bodies and shaping individual behavior that marked the reforms of the mid-nineteenth century.

The twin pillars of cultivating expertise and disciplining operators are most evident in the educational practices of the Ottoman telegraph corps, as documented in a 1908 manual detailing the admissions and training processes for new recruits. Reflecting what Cyrus Schayegh has referred to as the modernist science framework—which equally emphasized "accurate theory and useful practice"—the Ottoman telegraph school sought to produce telegraphers who possessed the right knowledge and the proper behavior.[15] While the school's name had since changed to *Posta ve Telgraf Mektebi,* it was still located in Istanbul and it recruited students from throughout the empire using a competitive exam that included both an oral and written section.[16] Admitted students were expected to already have sufficient knowledge of French, a solid understanding of math and physics, at least one year of administrative work, and a beginning familiarity with Morse code.[17] In addition to their intellectual qualifications, students were also assessed on their ethical and physical condition. For example, the listed criteria for recruits explicitly stated that

[14] Melis Hafez, "The Lazy, The Idle, The Industrious: Discourse and Practice of Work and Productivity in Late Ottoman Society" (PhD diss., University of California, Los Angeles, 2012)

[15] Cyrus Schayegh, *Who is Knowledgeable is Strong: Science, Class, and the Formation of Modern Iranian Society, 1900-1950* (Berkeley: University of California Press, 2009), 52

[16] Said Olgun, "Posta ve Telgraf Mektebi Talimatnamesi." Yakin Donem Turkiye Arastirmalari, Yil: 2014/1-2, Cilt, Sayi: 25-26 Sf, 149

[17] Ibid., 149-182

students must have good ethics (*hüsn-ı ahlak*), exhibit perseverance (*ikdam)*, possess a strong physical constitution (*kaviyülbünye),* and even pass a swim test.[18]

Admitted students went on to seven months of intensive coursework followed by a six-month apprenticeship. The curriculum included a combination of theoretical and practical trainings, some of which were specific to telegraphy and others that were generally useful for Ottoman bureaucrats. For instance, students took courses in the fundamentals of accounting and book-keeping, in addition to classes in electro-magnetic theory, measuring electricity, telegraph operations and instruments, material science, applied mathematics (trigonometry and geometry), and undersea and underground cables. In addition to taking twelve classes per week, students also had French tutorials and did regular drills with Morse and Hughes telegraph machines. These manual exercises were a critical part of the curriculum, as the school believed that repetitive practice helped the telegraphers to "achieve a state of being well-versed in the science of the machines" (*iktisab-i rüsuh eyleyeklerdir).*[19]

After completing their coursework, students then undertook an apprenticeship at one of ten possible sites. Intended to give students additional practical experience, possible assignments included staffing particular offices (such as the Beyoglu and the Yeni Cami stations in Istanbul); monitoring large sections of the network (such as the Istanbul-Konya line); coordinating repairs of the system through the central office; and even working at the electricity generation plant at Haydarpaşa. Notably, the Ottoman telegraph administration also partnered with the British Eastern Telegraph Company for its apprenticeship program, including company stations as possible sites for the new technocrats to hone their recently acquired skills. As the third chapter

[18] Ibid., 150

[19] Ibid., 153

of this dissertation shows, this was only one of many instances in which the imperial government partnered with and even depended on the foreign company in order to maintain and develop its telegraphic infrastructure.

Telegraph students were closely monitored during both their classroom education and their apprenticeships. Teachers and directors wrote daily reports on how students and apprentices spent their time, tracking activities on an hourly basis. In addition, directors also surveilled the general composure and behavior of the apprentices (*ahval* and *hareket)*, recording both the physical as well as the moral actions of the new recruits.[20]

The education of an Ottoman telegrapher continued beyond the official training period. Every year, up to forty employees were selected to participate in a continuing education program that was created to expand the knowledge of current employees. In order to be eligible, telegraphers had to be under the age of 30, based in Istanbul, and had to have demonstrated "good ethics and sound build."[21] Classes were held every week for three hours a day, and as with the curriculum for new recruits, they covered a range of scientific, technical, and administrative topics. While the curriculum included some basic courses, such as electricity and magnetism, it also included more advanced subjects, such as the science of sound, light, and heat. There was also a particular emphasis on surveying and geography, a subject that included both global content (based on the "five continents" framework) as well as material specific to the empire (such as administrative divisions and notable mountains, rivers, and gulfs).[22]

[20] Ibid., 154

[21] Ibid., 155

[22] Ibid., 156

This dual emphasis on knowledge and practice also manifested in the telegraph administration's periodical. First published in 1876, the *Postal and Telegraph Journal* (*Posta ve Telgraf Mecmuasi*) was composed of two sections, reflecting the publication's two purposes.[23] The first section provided telegraph operators with regular updates about organizational matters, such as the state of the network (expansions, maintenance, and delays) and information about employees (transfers, deaths, promotions, and punishments for bad behavior). The second section of the journal provided readers with useful information on technical and scientific matters, reviewing basic principles and covering new advancements in the field.[24] As stated in the introduction of the March 1901 issue, this second section of the publication was intended to provide "technical articles, particularly regarding electricity and telegraphic technology, and a variety of information on matters regarding public works…in an appropriate language that can be understood by all employees."[25] In any given issue, telegraphers were exposed to theoretical issues and explanations (such as new types of batteries and the mechanism behind electrical circuits) as well as more practical articles, such as one on how to repair a galvanometer and another that categorized the most effective insulators and conductors.[26]

While aspects of an Ottoman telegrapher's education were specific to the imperial context, such as learning the empire's geography, much of the material was presented as universal knowledge, part of the international science of telegraphy and electricity.[27] This belief

[23] Asif Tanrikut, "Türkiye'de Posta ve Telgraf ve Telefon Tarihi ve Teşkilat ve Mevzuatı. Ankara, 1984, 502

[24] *Posta ve Telgraf Mecmuasi*, March 1901

[25] Ibid., Introduction to Unofficial Section

[26] Ibid.; *Posta ve Telgraf Mecmuasi*, April 1900

[27] Olgun, 160

in the universality of telegraphic knowledge was critical to the emerging discourse of technocratic authority, as it positioned the corps of Ottoman telegraphers to be members of a global elite capable of navigating the new material framework that governed the world.

Universal Expertise

As a network technology, the telegraph required systemic coherence: wires and transmitters needed to be of a certain standard, operators had to share a certain competency, and codes required common meaning. This universalism presented a challenge given that the global telegraph network was operated by dozens of national telegraph administrations and private companies, all of which were free to choose the particulars of their operations. However, as the international telegraph network grew, telegraphic expertise came to be seen not as locally contingent, but as a standardized set of practices and knowledge that was shaped by a defined community of telegraphic practitioners.[28] The Ottoman telegraph administration sought to be a part of that community through promoting a sense of the global in its publications, and through participating in international forums dedicated to furthering telegraphic science.

This effort to be a part of the global community of experts was more than just a superficial exercise. From its beginning, the Ottoman telegraph system was embedded in a technological system that extended beyond the borders of the empire, making it important for the Ottoman telegraph corps to demonstrate its knowledge and expertise to the international community of telegraphers. As Steven Shapin and others have revealed, a scientific community's determination of what is true and what is false is based largely on the implicit trust and sense of

[28] Simone M. Müller, *Wiring the World: The Social and Cultural Creation of Global Telegraph Networks* (New York: Columbia University Press, 2016), 157

civic fraternity that members of the community extend to one another.[29] In other words, expertise is not just what one knows: it is also the recognition of that knowledge by a defined social group. Thus, Ottoman telegraphic expertise cannot be viewed merely as what the Ottoman telegraphic corps knew, but also the degree to which that knowledge was recognized and accepted by other community members.

As the technology spread during the middle of the nineteenth century, so too did the broader group of those interested in the science and practice of telegraphy. Thus the borders of the community of telegraph experts were always international, never remaining within any political boundaries. However, as with most Western technologies and sciences, there was a persistent debate about how cosmopolitan this scientific community could be. From the Ottoman perspective, telegraphic science may have emerged in Europe and the United States, but it could be learned, mastered, and even improved by Ottoman subjects. Some Ottoman enthusiasts of the technology even portrayed the telegraph as one of the many inheritances that the world had received from the ancient Greeks and Persians, effectively erasing the technology's origin as an American and British invention and placing it within the heritage of Islamic civilization.[30]

However, not all telegraphers agreed with the Ottoman position that telegraphic science could be universally mastered. Among early European and American promoters of the international telegraph network, many believed that the system needed to be operated by Europeans or Euro-Americans, who, they asserted, had the best understanding of the

[29] Steven Shapin, *A Social History of Truth* (Chicago: University of Chicago Press, 1994); Harry Collins and Robert Evans, *Rethinking Expertise* (Chicago: University of Chicago Press, 2007). For the importance of the community in demarcating science from non-science, see Thomas F. Gieryn, "Boundary-Work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists" *American Sociological Review* 48, no. 6 (Dec., 1983), pp. 781-795

[30] Munif Pasha, "Tarih-i Telgraf," *Mecmua-i Funun*, I. no. 11 (Zilkade 1279)

technology.[31] While some enthusiasts praised the concept of a global fraternity of telegraph operators, they did not extend this brotherhood to non-Western peoples. Rather, the telegraph was seen as a bulwark of colonial rule: a means to ensure the domination of European and Euro-American civilization over the world and its inhabitants.[32]

Given the contemporary association between civilization and technological expertise, the ability to manage a telegraph system promised to bring the Ottoman authorities more than just rapid communication.[33] For the Ottoman state, the cultivation of telegraphic expertise offered a means for demonstrating parity with other European empires: it was evidence of Ottoman enlightenment and historical progress. In a world in which European states justified colonization of non-Western lands with claims of ushering in modernity, performing technological expertise was just as important as possessing it.[34]

This performance of being a member of the international community of experts began with the reading material offered to members of the telegraph corps. Amidst the articles and updates of the *Postal and Telegraph Journal*, operators could learn about the latest developments in electrical science from around the world. In fact, the publication stated that many of the articles included in the second section of the journal came directly from foreign publications.[35]

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[31] Müller, *Wiring the World,* 108

[32] Ibid., 97

[33] For more on the association between cultural superiority and technology, see M. Adas, *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance* (Ithaca, NY: Cornell University Press, 1990); G. Prakash, *Another Reason Science and the Imagination of Modern India.* Princeton: Princeton University Press, 1999.

[34] In this way, the Ottoman approach to telegraphic expertise was similar to other Ottoman attempts to demonstrate their equality with European imperial powers. See Ussama Makdisi, "Ottoman Orientalism." *American Historical Review* 107, No. 3 (June 2002), pp. 768-796; Selim Deringil, *The Well-Protected Domains: Ideology and the Legitimation of Power in the Ottoman Empire 1876-1909* (London: I.B. Tauris, 1998)

[35] *Posta ve Telgraf Mecmuasi*, June 1888

For example, reports of electrical motorboats in Geneva and the intercity telephone system in Paris gave Ottoman telegraphers the sense that they were part of a larger community that was on the cutting edge of scientific progress and technical capability.[36] The Ottoman telegrapher Aziz Akincan expressed pride at knowing that his administration was part of this broader community, and that it even excelled in comparison to its peers. In his memoir, he wrote,

> Our directors were distinguished in the international congresses (on telegraphy), and many of our employees were among the fastest communicators in international speed competitions. Indeed, the brilliance of the Turks was present in the profession.[37]

This sense of belonging to a larger profession was also bolstered by articles on various postal and telegraph services around the world. Ottoman clerks had the opportunity to learn about the telegraph systems in Egypt, the United States, France, and Germany, which were each presented as segments of a global system of wires.[38] By setting these networks in a comparative framework, these articles conveyed the sense that telegraph networks in different countries shared an essential, defining characteristic that united them across their geographic and cultural differences. Each network and its operators could be understood not as distinct phenomena, but as variations of a technical theme.

The Ottoman effort to be a part of the broader, international community of telegraphic experts is most markedly seen in the empire's participation in the International Telegraph Union (ITU). Founded in 1865, the ITU was one of the first international public unions of the nineteenth century. As a platform for both state authority and universal practices, the ITU required both a belief in the integrity of national boundaries as well as a determination to

[36] *Posta ve Telgraf Mecmuasi*, August and September 1888

[37] Akincan, *Turkiye'de Posta ve Telgrafciklik,* 6

[38] Ibid.

transcend those borders in order to standardize processes around the globe. As a result, the ITU and the other public unions of the nineteenth century both promoted the concept of universal standards as well as the role of national governments in reproducing those shared practices.[39]

While there had been attempts in the 1850s to standardize telegraphic communication among a few European states, the first major effort to coordinate across national boundaries occurred in 1865.[40] In that year, representatives of twenty-one European states—including the Ottoman Empire—met in Paris and signed what would become the founding documents of the future ITU. The convention laid out both the broad principles of international telegraphy as well as specific details of administrative practices, covering such issues as the hours of operation for telegraph stations, the cost of messages, and the balancing of accounts across borders. At the Vienna meeting of 1868, the member states established the "International Bureau of Telegraph Administration" and introduced a fee system for the participating member states. These fees were based on a system of classes (I-VI), whereby members could elect their class and pay the appropriate membership fee, with first-class members paying the largest share of the organization's expenses.[41] Despite having unequal shares of the expenses, all member states still only had one vote in ITU decisions.

This class-based membership was significant for the Ottoman Empire, which was a founding first-class member of the ITU and maintained this status until the empire's expiration at the end of World War I. Since first-class membership cost more but did not actually bring greater

[39] Craig Murphy, "International Organization and Industrial Change: Global Governance since 1850 (New York: Oxford University Press, 1994), 53

[40] Unknown Author, *L'Union Télégraphique Internationale (1865-1915)* (Berne: Bureau International de l'Union Télégraphique, 1915), 3-9.

[41] Documents de la Conference Télégraphique Internationale de Vienne: Reglement, 1868, p. 82. ITU Digital Archive. http://www.itu.int/dms_pub/itu-s/oth/02/01/S02010000024802PDFF.PDF

power, it suggests that states opted for the status in order to gain prestige on an international platform. This was particularly relevant for a state like the Ottoman Empire, which was continuously striving to be considered a peer among European powers.[42] As a peripheral member of the international community, this fee bought the Ottomans the status of being a premier member of an international organization committed to technical excellence. It made the empire a peer among the other first class members, which were notably the great powers of the day: Great Britain, Germany, France, Russia, and the Austro-Hungarian Empire.

The connection between national prestige and telegraphic expertise is further substantiated by the Ottoman exhibitions at the world fairs of Vienna (1873) and Chicago (1893), and at the international exhibition on electricity at Vienna (1883). At all of these events, representatives from the Ottoman telegraph ministry displayed telegraph machines and equipment from the newly established telegraph factories in the empire: tokens of the empire's scientific and industrial progress and symbols of its equality with the world's leading nations.[43]

These performative practices were not only important for the international community of practitioners, but also for the morale of the corps. In the June 1888 issue of the *Postal and Telegraph Journal*, the editorial board included a copy of a certificate issued to the Ottoman telegraph administration by the organizers of the international exhibition on electricity. Represented by the Ottoman technical director, Emile Lacoine, and the head of the Ottoman telegraph factory, Raif Effendi, the Ottoman delegation had presented a number of innovations at the exhibition, including a modified galvanometer, a new switch that conserved battery power,

[42] See Deringil, *The Well-Protected Domains*

[43] On the Chicago exhibition, see Akincan, *Turkiye'de Posta ve Telgrafciklik*, 11; On the Vienna exhibition, see Demir, *Turkiye'de Posta Telgraf ve Telefon Teskilatinin Tarihsel Gelisimi,* 41. For more on the Ottoman Empire's engagement with these affairs, see Gultekin Yildiz, "Ottoman Participation in World's Columbian Exposition (Chicago-1893)" in *Turkluk Arastirmalari Dergisi* 9 (March 2001)

and a mechanism that enabled one telegraph receiver to alternate between two lines. In documenting this participation at the conference, the certificate made special note of the devices that "were made in the workshops of the Ottoman administration, and give by the excellence and the practice of their construction a brilliant testimony of the care and the intelligence brought in the direction of this establishment."[44] By publishing this praise in the journal, the administration provided evidence to its readership of Ottoman telegraphers that they were members of an institution that was contributing to the advance of universal knowledge and technical practice.

Notably, the Ottoman Empire was the only first-class member to miss the privilege of hosting an ITU convention. Vienna, St. Petersburg, Paris, Berlin, and London—capitals of all of the other first-class members—each hosted a convention or plenipotentiary conference. Istanbul was never selected for the occasion, which was a multi-week affair and an opportunity for the host country to show off. While the Ottomans never hosted a conference, they did send a representative to every formal event, and played an active role in the modification of the rules and regulations of the organization. For example, the Ottoman delegation to the Budapest Convention of 1896 put forward twenty-four proposals to modify different aspects of international telegraphy. These propositions dealt with a wide range of subjects, including how to categorize different stations, the requirements for ensuring the quality of lines on active routes, rules governing how senders prove identity and sign messages, the format for writing the recipient's address, protocol for punctuation, rules for archiving old messages, and contingencies for dealing with underpayment.[45]

[44] *Posta ve Telgraf Mecmuasi*, June 1888

[45] Documents de Conference Télégraphique Internationale de Budapest, Propositions, 1897, p. 271, 274, 292, 295, 309.

From these records, it is clear that Ottoman representatives made a deliberate effort to shape the different regulations and rules that governed international telegraphy. The empire did not sit back and merely watch the world of global telecommunications unfold, but rather it sought to perform its position as a first-class member of the ITU. Critically, this performance also had a scientific component, as representatives of the Ottoman Empire participated in the research forum presented by the internationalist organization.

In addition to the ITU's mission to coordinate international communication, the organization was also dedicated to furthering the universal science of telegraphy and the expertise of the global corps of telegraphic engineers. Despite the early success of telegraphy, the science behind the technology proved difficult to understand up until the last decades of the nineteenth century.[46] As a result, professional journals for telegraphers were often a mix of practical instruction and scientific theorization, with practitioners sharing their observations, proposing explanations, and even using their professional stations as laboratories to run informal experiments. The majority of these journals were organized around national groupings, such as the Ottoman *Posta ve Telgraf Mecmuasi* and the Italian *Il Telegrafista*. However, the ITU's *Journal Télégraphique* provided a unique opportunity for telegraph operators from around the world to participate in a global conversation on telegraphic science, thereby manifesting the universalist aspirations that defined modern scientific discourse. From the question of the suitability of female telegraph operators to the workings of new batteries, different telegraph administrators shared their views, opinions, and theories of the new technology and its practice.

Ottoman telegraph administrators were no exception. Emile Lacoine (1835-1899), who was the technical head of the Ottoman telegraph administration from the 1870-1880s, was a

[46] For the intersections between telegraphic theory and science, see Crosbie Smith and M. Norton Wise, *Energy and Empire: A Biographical Study of Lord Kelvin* (Cambridge: Cambridge University Press, 1989)

frequent participant in this international exchange. A French electrical engineer who first came to Istanbul during his work on the building of the Suez Canal, he ultimately stayed in the city and took a post as a technical advisor to the telegraph ministry. Rising to the post of technical director (*Fen Kalemi Mudeeri)* of the telegraph administration, he also played a key role in instructing Ottoman telegraph students, implementing and designing curricula, editing the corps' journal, and representing the Ottoman telegraph corps at the international congresses related to electricity and telegraphy. He was a prolific author of theoretical and instructional materials on telegraphy, and he also ventured into other topics, such as the synchronization of calendars, astronomy, and the nature of earthquakes.[47]

Despite his foreign origin, Lacoine fully embraced his identity as a member of the Ottoman telegraph corps and imperial bureaucracy. He published a book on the Ottoman telegraph system called "The Application of Electricity in *Our* Country" (my emphasis), and for his articles published in international journals, Lacoine submitted his research in the name of the Ottoman telegraph administration.[48] He continued to work as an advisor for the Ottoman telegraph administration until his death in 1899, and he was ultimately buried in the Catholic cemetery in the Feriköy neighborhood of Istanbul.[49]

In his article published on January 25, 1870 in *Journal Télégraphique*, Lacoine investigated the vibration mechanism for the Hughes Machine, which was one of two machines

[47] E. Lacoine, *Takvim-i Cedid: 1308 Sene-i Maliyesine Mahsus"* (Matbaa-I Osmaniye, 1308 (1892)); Emile Lacoine, *Tables de concordance des dates des calendries arabe, copte, gregorien, Israelite, Julien, republicain, etc.: etablies d'apres une nouvelle method*e (Paris: Baudry, 1891); According to an 1895 article by D. Eginitis, Lacoine was also involved with research to determine the epicenter of the 1894 earthquake in Istanbul. See D. Eginitis, "Le Tremblement de Terre de Constantinople: du 10 Juillet 1894," *Annales de Geographie*, 4e Annee, No. 15 (15 Janvier 1895), 154

[48] E. Lacoine "Elektrigin memleketimizdeki tatbikati," *Tercuman-I Hakikat ve Servet-i Funun,* 1895

[49] Feza Günergun, "Salih Zeki ve Astronomi: Rasathane-ı Amire Mudurlugu'nden 1914 Tam Güneş tutulmasina," *Osmanli Bilimi Arastirmalari* 7, no. 1 (2005): 117-118

endorsed by the ITU and a common one in the Ottoman telegraph system.[50] Lacoine explained that the telegraph community continued to lack a firm understanding of the laws governing the vibration of the machine, and that scientists were divided into three schools of thought regarding this process.[51] Lacoine put forward his own theory on vibration, which he claimed was supported by experimentation and evidence. His overall claim was that the vibrations were not revolving in nature, but were rather rotational and occurred at equal intervals of time (isochronous). He concluded by providing a formula for determining the relationship between magnetic force, the duration of a current, and the maximum limit of the magnetism of an electromagnet. Significantly, he offered the article in the name of the Ottoman administration, and signed with his bureaucratic title. Thus, in writing and sharing this article, Lacoine acted both as a representative of the Ottoman telegraph administration and as a member of the global scientific community that was interested in telegraphy.

The Ottoman technician contributed again to the international community in a separate article on the effects of the aurora borealis on telegraphy.[52] Telegraphic scientists and practitioners had long puzzled over the relationship between meteorological events and disruptions in the network.[53] The correlation of system breakdown with the appearance of the aurora had led many scientists to believe, correctly, that the meteorological phenomenon was a

[50] Emile Lacoine, "Lois des vibrations dans l'appareil Hughes," in *Journal Télégraphique,* No 3, January 25, 1870, ITU Archive

[51] According to Lacoine, the three groups can be described as "les uns veulent considerer cette lame comme un veritable pendule conique, les autres y appliquent les lois des lames vibrant transversalement, et d'autres enfin ne veulent y voir qu'un effet de force centrifuge." See Lacoine, "Lois des vibrations dans l'appareil Hughes"

[52] Emile Lacoine, "Observations de l'auorer boreale du 5 Avril sur les lignes Ottomanes," in *Journal Télégraphique,* No 6, April 25, 1870, ITU Archive

[53] Müller, *Wiring the World,* 171

symptom of a "magnetic storm," which distorted the telegraphic signal. The telegraph system not only provided an excellent tool with which to conduct experiments on this dimension of electromagnetic theory, but it also allowed observers of a regional phenomenon to compare and contrast their experiences.

According to Lacoine's article on the subject, an unusual incident had occurred on April 5, 1870 at two o-clock in the afternoon at the Pera station in Istanbul. An operator had attempted to send a message to the Semlin station (modern day Zemun, Serbia), but the message had failed to go through. The operator had been using a Hughes machine, and despite the many attempts, the Semlin receiver reported that the message had never arrived. Since he was present at the station, Lacoine examined the problem himself. After accessing the line using a Morse machine, he noticed a strong current. At first he assumed that the current was from the batteries that powered the line, but upon disconnecting the battery, he discovered that the current was "natural."[54] According to Lacoine, the current was so strong that he could feel it even when his finger was forcibly holding down the lever on the telegraph machine. More bizarrely, Lacoine noted that the messages that the Semlin operator had sent through the Hughes machine appeared as an inverse on the Morse apparatus, with the dots and dashes appearing as blanks and the pauses appearing as pulses.

Lacoine concluded that this strange occurrence indicated the presence of a strong but variable, natural current that was running opposite to the East-West current of the battery-powered circuit. He suggested that the current may have been caused by an aurora borealis, which had been present in the area at the time, but he added that cumulonimbus clouds (*nuées electriques)* and hail storms may have also played a role. He concluded that it was neither one

[54] Lacoine, "Observations de l'auorer boreale"

nor the other, but rather a combination of both the aurora borealis and the electricity-producing clouds that had caused the current.

Lacoine ended his article by acknowledging the incomplete nature of his data and analysis, which did not definitively answer the question of how meteorological occurrences affected telegraphy. However, he expressed hope that his observations, in combination with the work of others, might nonetheless contribute to the scientific community's eventual understanding of the world. Reflecting a commitment to the international production of knowledge, he wished that his article would be "useful for science and for a more complete understanding of these curious meteors."[55]

By representing the Ottoman administration in this international platform for scientific knowledge production, Lacoine effectively signaled that the Ottoman telegraph corps was an equal member of the global community of telegraph experts. His participation demonstrates how the international journal served not only as a forum for scientific exchange but also as a platform for national legitimacy, particularly for the Ottoman Empire, which was otherwise not included in the construction of telegraphic knowledge. In her work on the internationalization of telegraphic expertise, Simone Müller has shown that the proclaimed cosmopolitanism of telegraphic science belied practices that were stubbornly Euro-centric: discussions of telegraphic experimentation and theory may have been multi-national, but they occurred within a "white system of knowledge."[56] Thus, in this context, Ottoman participation in the production of telegraphic knowledge was a political statement that sought to place Ottoman telegraphers within

[55] Ibid.

[56] Müller, *Wiring the World,* 176

the international community of experts and thereby secure the status of the empire among advanced nations.

Disciplining the Operator

The forging of the technocratic authority of the Ottoman corps relied on more than just the cultivation of expertise. It also depended on new modes of work in the telegraphic bureaucracy—physical practices that were shaped both by the needs of the technology and the social circumstances surrounding the Ottoman network. Behind these new practices was a discourse that envisioned the ideal telegrapher to be as reliable, efficient, and replicable as his instrument, while also exercising good judgment and a strong moral ethic. In other words, telegraphers were expected to combine their mind, body, and spirit when working the machines.

This contradictory expectation—that telegraphers would be both mechanical and sentient—was in some ways characteristic of a broader shift taking place in Ottoman government and popular culture. As recent scholarship has shown, the reforming Ottoman bureaucracy of the nineteenth century was a site for the forging of new concepts of work, in which productivity and efficiency were given a moral valence. The introduction of salaries, a fixation on work-time, dossiers on employee behavior, and concern about laziness all reflected new expectations for the modern bureaucrat, whose individual behavior and work ethic were viewed as central to the survival of the empire.[57] However, while there was a new focus on individual industriousness, meticulousness, and efficiency, older values of good judgment and personal integrity, as well as practices of patronage, remained prized.[58]

[57] Hafez, *The Lazy, the Idle, the Industrious,* Chapter 2

[58] Wishnitzer, *Reading Clocks,* 57

The telegraph administration was an important site of this transformation. In part, the fixation on the human operators was closely connected to the nature of the technology, which demanded constant mental and physical attention. This intimacy with the machine led Aziz Akincan to describe his work as an almost visceral act of pleasure, like playing a musical instrument. Using the Ottoman Turkish term "saz," which can mean both a stringed musical instrument as well as just "instrument," Akincan described, "If (only) I could describe the pleasure that I feel when sending messages on the beautiful instrument. When one smoothly strikes the sending key, the pleasure and the sensual enjoyment of that the lovely, attractive sound is simply addictive."[59] Even in writing about his experience from the distance of retirement, he still felt the physical pull of the machine. "It has been twenty-seven years since I left my beloved profession, but when I pass by telegraph stations now, and even sometimes at random moments, the addiction of sending messages with my fingers is something I just can't let go of."[60]

This physical and mental communion with the machine was viewed as essential to the proper functioning of the Ottoman system. An inattentive telegrapher could cause a gross miscommunication; a tardy telegrapher could cause delays; and an indiscreet telegrapher posed a risk to the entire system. In a 1912 speech to members of the Ottoman telegraph corps stationed in Beirut, the Ottoman telegraph director, Oskan Efendi, summarized what he believed to be the most important traits of telegraphers. He declared,

> The essence of our profession is orderliness, speed, and security. These are the three principles that should form the purpose of our profession. Our foremost duty is to work to deliver to the addressee—with perfect speed, order, and discretion—the contents of each

[59] Akincan, *Turkiye'de Posta ve Telgrafciklik,* 3

[60] Ibid.

> message; preserving each paper that passes through our hands with utmost care, as if it were our own life.[61]

He praised the ideal telegrapher as being defined, first and foremost, by his self-discipline: "I am entrusting this (duty) to your conscience. I call on you to faithfully perform this duty, without seeing it necessary to threaten you or to use force."[62]

However, in contrast to Oskan Efendi's promise to merely trust his telegraphers to perform their duties, the Ottoman telegraph administration actually adopted a number of practices that shaped telegraphers into meticulous, attentive, and consistent workers who could be trusted to manage imperial communication. One needs to look no further than a telegram itself to see evidence of these new exacting practices. Taking a recovered telegram from 1892 as an example, it is clear that Ottoman telegraphers had to both manage a great deal of detail and to act in a consistent manner.[63] The printed form included fields for the name and location of the sender and recipient, the number of words, the class of message (official, commercial, or personal), as well as a unique number identifying the telegram. There were also fields to indicate which employee received and sent the message.

Timekeeping and synchronization were also central features of sending and receiving messages. On the telegram form, there were multiple fields to record the timing of the message, including the time at the beginning of the transmission, the time at the end of the transmission, and the time at which the receiver was notified. The telegrapher indicated the hour and the minutes for each transaction, as well as whether or not the time was in the morning or the

[61] Speech of Nazir Oskan Efendi, 1912. Printed in Asıf Tanrikut, *Türkiye'de Posta ve Telgraf*, 748

[62] Ibid.

[63] BOA DH/SFR/163/61, No. 1, Encrypted Telegram, 1309 (1891)

evening. Notably, as of 1904, Ottoman telegraphers used a combination of *alla franga* and *alla turca* time for marking the time of messages: for telegrams sent in Latin script, telegraphers used the former and for those written in "Turkish script" (i.e. Arabo-Persian script), telegraphers recorded the time using the local time-keeping system.[64]

Indeed, time discipline and time consciousness were central to the practice of Ottoman telegraphy. Telegraphic stations in the empire were categorized by their working hours, work shifts were organized around time at the machine, and fear of delay and pride in punctuality were a constant part of telegraphic culture. Long before Oskan Efendi's call for his telegraphers to prioritize speed, the Ottoman telegraph administration fixated on the question of just how long messages took to travel through the network. For instance, in 1865, the Ottoman telegraph director tracked the precise time it took for messages to traverse the full length of the Ottoman lines, from the European frontier to the station at Fao on the Persian Gulf. In addition to tracking the time of transmission, which he measured down to the minute, the director also calculated the number of errors in each message. This exercise reflected a fixation not only on speed but also on precision, another element that featured prominently in the global culture of telegraphers.[65]

Time discipline also manifested in the punishment of telegraphers who were not performing at acceptable levels. Delay and tardiness were frequently cited—and punished—offenses, in addition to carelessness, lack of attentiveness, distorting messages, and improper disclosure of information.[66] Such transgressions resulted in days or weeks of docked pay,

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[64] SALT 384/Tel/C/1, No. 21, Telgraf ve Posta Nezareti Saltanat-ı Seniye-ı Telgraf Merakizine Mahsus Resmi Rehberdir, August 1905. *Alla franga* time refers to the European system of time-keeping (mean time), whereas *alla turca* time refers to the traditional Ottoman system in which the day started at sunset.

[65] Simon Schaffer, "Accurate Measurement is an English Science," in *The Values of Precision*, ed. M. Norton Wise (Princeton: Princeton University Press, 1995), 135-172.

[66] *Posta ve Telgraf Mecmuasi*, April 1900

depending on the severity of the misbehavior.[67] Furthermore, the administration also publicly called out deficient telegraphers and their misdeeds in the corps' official journal. In a section called "Rewards and Punishments" (*Mukafat ve Mucazat)*, the administration listed by name the telegraphers who underperformed or broke rules, and included their punishment as a warning to readers. For instance, in the March and April issues from 1900, a telegrapher could read about Raif Effendi in Hudeida, who lost five days' pay after acting disorderly; Tawfik Effendi in Beirut, who was also docked five days' pay for making a number of mistakes and being "careless;" and Zihni Effendi, who lost one week of pay after falling asleep and leaving his post during a nightshift in Beyoglu.[68] Given the network nature of telegraphy, it was not always clear who was to blame for a dropped word or a distorted message. In these cases, the administration would list and punish both telegraphers involved, and would even include specific details regarding the precise telegram in question, suggesting the careful accounting practices of both the men and the messages. The following excerpt provides an example of this type of dual citation:

> On July 1, 1900, telegram no. 3586, made of 18 words, sent to Beyoglu from Dersaadet, between employee Mordechai and Yanko, had errors…Telegram 3966 that was sent between employee Ziya in Dersaadat and another named Ziya in Kastamounu contained errors in interpretation...[69]

More severe misconduct, such as fighting or theft, resulted in dismissal and even jail time.[70] In the June 1888 issue, it was publicized that a Fuad Effendi had been sentenced to three months of

[67] Ibid., 6

[68] Ibid., 8 and 19

[69] Ibid., 7

[70] Ibid., 20

jail time for dipping into the cash box at the Bartin telegraph station on the Black Sea.[71] While it is unlikely that these announcements were comprehensive of all the workplace transgressions, their inclusion within the official journal reflects a disciplinary culture in which the administration sought to alert telegraphers to the perils of poor performance and improper behavior.

In addition to airing transgressions and punishments within the community, the administration also promoted a disciplinary culture by asking telegraphers to monitor each other and report any improper behavior.[72] Telegraph stations were often remote, and it became necessary for the administration to create a sense of constant surveillance, even if this was just a technique for encouraging self-correction. In an announcement issued to all members of the telegraph corps on the eve of World War I, the telegraph ministry reminded its employees of the importance of informing their supervisors of any improper behavior that they witnessed, and that such surveillance acts were among an operator's "most sacred duties."[73]

This effort to discipline the telegraph corps also manifested through the rotation of telegraph clerks throughout the empire. While the practice of rotating bureaucrats was not new—it had marked the empire's method of rule in the early modern period—it took on a new dimension as the standards of the technology gave way to a standardization of behavior among operators.[74] No matter where an operator was in the empire, he was expected to perform

[71] *Posta ve Telgraf Mecmuasi,* June 1888

[72] Orhan Koloğlu, "Bektasi, ittihatci ve telgrafci, Sakalli Esref'in Anilari." *Tarih ve Toplum*, No. 115, (June 1993) 10-11.

[73] Yuksel, *Sucluluk ve Sucsuzluk Arasina,* 5

[74] On the early modern practice of rotating imperial officials, see Karen Barkey, "In Different Times: Scheduling and Social Control in the Ottoman Empire, 1550 to 1650," in *Comparative Studies in Society and History* 38, no. 3 (1996): 460–483

consistently and in accordance with the technical and bureaucratic practices of the administration. As a result, an Ottoman telegraph clerk could expect to work in a multitude of locations in the empire over the course of his career. The administration's periodical announced these rotations, and made note if they were precipitated by dismissals or deaths, or if they were reciprocal (meaning two operators switched locations). While some rotations were regional, such as from Lattakia to Beirut or Salonica to Janina, others were inter-regional, such as Edirne to Mecca and Hudeida to Trabzon.[75]

In his writings on his career in the Ottoman telegraph corps, Suleyman Esref (1873-1956) recounted this disciplinary culture of surveillance and rotation and revealed how it could also be abused to serve petty grievances. Born in Istanbul to a Muslim family of beeswax merchants, Esref lost his father at an early age and was encouraged to enter the telegraph service by his uncle, Emin Bey. After passing his exams, Esref was first sent to work in Yozgat in central Anatolia, the first of seven rotations that he would experience in just the first sixteen years of service. From central Anatolia (Yozgat) to the Sea of Marmara (Istanbul and Yalova), and from southern Anatolia (Tarsus) to Salonica and Thrace (Iskece and Kesan), Esref's career demonstrates the remarkable itinerancy that had become standard for Ottoman telegraphers.[76]

On one rotation, Esref landed a comfortable position at the telegraph station in Yalova on the southern coast of the Sea of Marmara. Yet unfortunately for him, Esref's assignment there was cut short by a hostile colleague. According to his writings, a fellow telegrapher in the office—who was jealous of Esref's position—falsely accused him of malfeasance in the office in order to have him transferred. In his bitter account, Esref wrote, "Like a dirty swine, this

[75] *Posta ve Telgraf Mecmuasi*, June 1888

[76] Koloğlu, *Bektasi, Ittihatci ve Telgrafci,* 10-11.

associate wrote to the general director, saying that there was a 'harmful presence' in the office. His desire to take my position was ultimately successful, and I was transferred to Keşan, which was a filthy, and miserable post."[77]

These rotational practices reflected and contributed to a sense that telegraphers were interchangeable: the products of a shared working environment and professional culture. The very existence of the administration's periodical is evidence of this effort to connect the scattered members of the community with a shared identity. Particular sections of the journal further demonstrate this, such as notices about awards for exceptional behavior and the retirements of distinguished members.[78] Death notices and obituaries in the publication also served to create a sense of professional community, providing personal details about the deceased telegrapher's family, education, and career in the service.[79] This effort to highlight the personal and professional stories of particular members reflects a discourse that held the Ottoman telegraph community to be bound together by comradery and shared practice despite the geographic spread of its members.

While the work practices of the Ottoman telegraph administration disciplined operators into methodical and predictable workers, this did not mean that they were viewed as automatons. Rather, the professional identity of Ottoman telegraphers was marked by a sense that they would approach their technical work with good judgement and strong ethics. In contrast to telegraphers working for private telegraph companies, who were expected to be indifferent to the content of messages, the Ottoman telegraph corps was expected to be the first line of defense for

[77] Ibid., 11

[78] *Posta ve Telgraf Mecmuasi,* April 1900; *Posta ve Telgraf Mecmuasi,* June 1888.

[79] Ibid.

monitoring communication in the empire.[80] For example, in its engagements with the ITU, the Ottoman government asserted its right to ban messages that might harm imperial security or public morality, a right that could only be exercised through the careful observation of messages by the imperial telegraph corps.[81] To enable operators to fulfill this surveilling duty, the Ottoman government frequently banned the use of coded language in telegraph communication in the empire.[82] This expectation that telegraphers be able to read the contents of messages is also evidenced by the language requirements that existed for different offices in the empire: language proficiency was a factor in determining staff placements, as certain stations required employees who could handle messages in particular languages.[83] For example, operators at Jeddah had to know Arabic and Turkish, and those at Pera had to know French and English.[84] These language requirements enabled telegraphers to identify any unintended mistakes or distortions that occurred along the way, and to intercept any messages that might pose a threat to imperial security.

Thus, Ottoman telegraphers sat at the intersection of machines and men, acting both as efficient and interchangeable operators and as scrupulous guardians of the empire's communication network. By shaping daily behavior and individual habits, the practices of

[80] POR DOC/ETC/5/135/1, No. 1, Rule Book for Employees, Eastern Telegraph Company, 1891

[81] Documents de la Conference Telegraphique Internationale de St. Petersbourg. Convention, Articles 5,6,7,8 and 11. p. 6-11

[82] ITU NOT/104, ITU Notification, 1 November, 1875; ITU NOT/147, ITU Notification, 1 January 1878,

[83] In particular, the Ottoman administration distinguished between offices that utilized messages in Latin script and those using "Oriental" (Arabic) script. See AK ISTKA/2012/BIL/233, No. 8, *Telgraf ve Posta Estatisque,* 1316 (1900)

[84] ITU NOT/233, ITU Notification, August 11, 1882; Carte Telegraphique de l'empire Ottoman, 1867, ITU Archive

telegraphic discipline produced operators who could act as mediators between the social and technical dimensions of the modern world.

The Revolution will be Telegraphed

This view of telegraphers as disciplined experts came to be part of the worldview of an emerging class of individuals who believed that the empire needed to be managed by technocrats. While differing on some issues, this class was united in their belief that the Ottoman state must embrace modern technology in order to survive, and that this technologically-based modernity demanded statesmen who were capable of managing technical systems. There were largely two camps in this group: Islamic modernists and positivists. While they disagreed on the compatibility of religion and modern science (the former proclaimed it while the latter rejected it) both groups wholeheartedly embraced technology and the accompanying model of technocratic governance.

Jamal al-Din al-Qasimi (1866-1914) was a reformist Islamic scholar and vocal admirer of the Ottoman telegraph corps. Originally from Damascus, al-Qasimi emerged as a fierce advocate for both the application of technology in religious practices as well as the compatibility of Islam with modern science. After falling into a public debate with conservative clerics who had condemned the use of the telegraph in religious practices, in 1911 al-Qasimi wrote a lengthy treatise defending not only the permissibility of the technology but also the soundness of its human operators.[85] This was because much of the criticism from the conservative clerics had stemmed from claims that telegraphers were prone to making mistakes, and thus could not be trusted for sacred communications. Entitled "Guiding Mankind on Acting upon the Telegraph Message," his treatise describes in detail the hiring protocol of the Ottoman telegraph

[85] Vanessa Ogle, *The Global Transformation of Time, 1870-1950* (Cambridge: Harvard University Press, 2015), 155

administration and the vetting and disciplinary procedures that were in place.[86] Referencing articles from the Ottoman telegraph administration's rulebook—which he claimed to have translated—al-Qasimi presented a number of safeguards that guaranteed the competency and integrity of telegraphers. For instance, he claimed that telegraph directors were not to hire anyone whose knowledge and character they could not confirm: new employees needed to have a clean criminal record, and they required witnesses to attest to their moral rectitude.[87]

In addition to pointing to the careful screening of telegraph employees, al-Qasimi also praised the different procedures the Ottoman authorities had instituted to minimize the risk of error and deception, such as strict protocols for identifying senders and receivers and requirements for messages to be clear.[88] He referenced the rules that prohibited telegraphers from accepting any telegrams with unintelligible phrases or unclear words, and those that banned the delivery of messages to anyone but the intended recipients.[89] Al-Qasimi also pointed to the administration's punitive system, reassuring his readers that telegraphers who changed words or delayed messages were punished first with docked pay and then, if the bad behavior continued, with termination.[90] Thus, for al-Qasimi, the disciplinary practices of the telegraph corps proved to be one of the pillars of his argument in favor of the telegraph: the soundness of the operator effectively guaranteed the soundness of the technology.

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[86] Ibid., 157

[87] Jamal al-Qasimi, *Irshad al-Khalk ila al-aml bi-khaber al-barq.* Al-Muktabus Press, 1329, 55

[88] Ibid.

[89] al-Qasimi, *Irshad al-Khalk ila al-aml bi-khaber al-barq,* 55

[90] Ibid., 56

While these debates were explicitly on the quality of the Ottoman telegraph corps, they were implicitly dealing with the broader issue of the capability and authority of the modern Ottoman state. As the Ottoman government came to treat telegraphic science and practices as a type of state property, the network transformed into a site in which the state's authority could either be legitimated or questioned.[91] As a result, scientific expertise and discipline came to be markers of a new type of Ottoman state authority, one in which the ability to rule was increasingly tied to the ability to manage complex technical systems.

Idealization of technical expertise and discipline was also central to the worldview of Ottoman positivists. As the works of Şükrü Hanioğlu and Nader Sohrabi have demonstrated, an ideology that centered on faith in science, progress, and technical meritocracy emerged as one of the most powerful forces in the empire by the last decades of the nineteenth century. Known collectively as the Young Turk movement, these reformers assailed the sultan as the "archrival of progress and enemy of science," and demanded the meritocratic reform of an imperial system hobbled by tradition and patrimonialism.[92] Inspired by the promise of modern technology and frustrated by the perceived incompetency of the Hamidian bureaucracy, these reformers held that the Ottoman state should be left to those who were knowledgeable of the new sciences and capable of managing the technical systems that were now intertwined with governance.[93]

For these Ottoman positivists, the telegraph was compelling evidence of the need to adopt not only Western technology but also the Western systems of knowledge and technical training that accompanied such tools of modernity. As expressed by Şemsiddin Sami, a positivist and

[91] Yalçinkaya, *Learned Patriots,* 215

[92] Nader Sohrabi, *Revolution and Constitutionalism in the Ottoman Empire and Iran* (New York: Cambridge University Press, 2011), 62; *Sura-yi Ummet,* No. 21, 29 January 1903/Zilkade 1320, "Nur ve Zulmet", pp.2-3

[93] M. Şükrü Hanioğlu, *The Young Turks in Opposition* (New York: Oxford University Press, 1995), 60-62

modernist whose work was influential to the Young Turks, "We cannot build a railroad, a ship, or use the telegraph with the chemistry or physics of Jahiz."[94] Şerafeddin Mağmumi, another member of the Young Turk movement and early member of the Committee of Union and Progress (CUP), also used the telegraph as a symbol of the superior utility of modern science over Ottoman traditions: "Look at the divans, uselessly occupying the shelves in the libraries…Ancient and modern poetry can make neither bread nor clothing for man…The true poets, i.e. scientists, invented ships and the telegram."[95]

Notably, the CUP included many telegraphers amid its rank and file members as well as its leadership. Talaat Pasha, who would go on to become one of the most important CUP leaders, began his career at the telegraph station in Edirne. In addition, CUP telegraphers played a crucial role in the events surrounding the 1908 Young Turk Revolution. As CUP branches throughout Macedonia seized control of military and government infrastructure, telegraphers loyal to the movement took over the lines to demand the sultan's reinstatement of the constitution, or else face armed insurrection. Confronted with this flood of telegrams, Sultan Abdülhamid II conceded to the movement's demands and issued an imperial decree that reopened the Ottoman chamber of deputies.[96] Furthermore, during the 1909 countercoup—in which anti-revolutionary forces seized power in Istanbul for eleven days—CUP telegraphers proved once again to be indispensable to the revolution: distress telegrams sent from the capital to the movement's

[94] Şemsiddin Sami, "Medeniyet-ı Cedidenin ümem-I Islamiyeye Nakli," *Güneş,* no. 4 (1301/1883), 179-84. Hanioğlu, *Young Turks*, 15.

[95] Hanioğlu, *Young Turks,*19

[96] M. Şükrü Hanioğlu, *Preparation for a Revolution: The Young Turks, 1902-1908* (New York: Oxford University Press, 2001), 273

stronghold in Salonica enabled the rapid deployment of troops to put down the uprising and reinstate constitutional rule.

The role played by telegraphers in the revolution sparked Akincan, who served in Macedonia during the revolution, to write about his experience as an Ottoman telegrapher. A CUP member himself, Akincan reflected on this moment of inspiration and his profession's critical role in the political transformation of the empire:

> It awoke in me a great desire to write about my colleagues, who had served in the revolution and in the communications that had passed in Thrace, memories that dealt with the history of our eternal nation and a love for (my) dear profession; a profession that I carry and preserve in the deepest corners of my heart.[97]

In particular, Akincan proudly remembered the role played by himself and his colleagues in responding to the 1909 countercoup. According to his memoir, Akincan was working in the Edirne station when suddenly one of the machines received a flurry of urgent messages from Istanbul. From the halting style of the messages, Akincan surmised that the sender was an apprentice, and that he was in distress. This hunch was confirmed by the message that came down the line:

> (he said) armed soldiers were heading toward the chamber of deputies, demanding sharia. I understood the enormity of this event, and I immediately notified CUP officials that there was an armed, reactionary movement in Istanbul and that they were marching on the chamber of deputies.[98]

Having learned of the uprising, the CUP was then able to mobilize the *Hareket Ordusu* (the army of action), under the leadership of Şevket Pasha, which was deployed from Salonica to Istanbul to put down the uprising and reinstate constitutional rule. According to this narrative,

[97] Akincan, *Turkiye'de Posta ve Telgrafciklik,* Preface

[98] Ibid.

telegraphers not only ushered in the era of representative government, but they also ensured that it was not killed in its infancy.

For Akincan and other admirers of the Ottoman telegraph corps, the telegrapher embodied a new type of modern Ottoman official, one whose knowledge and discipline positioned him to steer the empire in a world that was governed by technical systems. Viewed as the intermediaries between men and machines, the Ottoman telegraph corps helped cement new expectations in Ottoman society about the role of technology in the construction of political authority and the centrality of discipline in the modern world.

Conclusion

By the turn of the twentieth century, the Ottoman telegraph system had emerged as much more than a communications network. For nearly half a century, the institution of the Ottoman telegraph corps had served as a bridge between political and scientific authority in the empire, giving legs to the notion that the imperial government should have the knowledge and discipline needed to operate modern technologies. While the project to create a disciplined corps of telegraph experts was uneven and at times unsuccessful, it nonetheless contributed to the emergence of the ideology of technocratic authority in the empire.

As demonstrated by a number of scholars, this ideology would be among the most important in the empire during its last decades. From imperial projects aimed at "civilizing" restive corners of the empire, to the implementation of public health measures during the Hajj, the technocratic authority of the state became a critical part of modern Ottoman governance.[99]

[99] Michael Christopher Low, "Ottoman Infrastructures of the Saudi Hydro-State: The Technopolitics of Pilgrimage and Potable Water in the Hijaz," in *Comparative Studies in Society and History* 57, no. 4 (2015). Michael O'Sullivan, "The Little Brother of the Ottoman State': Ottoman technocrats in Kabul and Afghanistan's

However, while these studies are critical for understanding the outcomes and practices of technocratic authority, they do not address the question of where, and how, that authority derived in the first place. The little scholarship that has been done on the roots of technocratic elitism has largely approached this history from an intellectual standpoint, divorced from the material landscape of the empire. In particular, the leading scholar of this topic, Hanioğlu, has argued that the future members of the CUP were avid readers of Comte and Büchner, suggesting that their faith in science was the result of exposure to ideas rather than the product of lived experience.[100] While intellectual exchange was certainly an aspect of the formation of technocratic authority in the Ottoman context, it is not the whole story. This is because Ottoman enthusiasm for technology was much more than a fetish: it was connected to the experience of witnessing and operating the technical system of the telegraph.

As described by Leo Marx in his essay on the roots of technocracy, the emergence of technical systems in the nineteenth century altered the ways in which humans conceived of technology and its role in society. As technologies shifted from being individual "artifacts" to complex, interdependent networks, many nineteenth century commentators began to endow technology with an unprecedented amount of agency in driving the course of history.[101] For those who believed in the unbridled power of technology in manifesting progress, it became a small step to then conclude that those who were able to manage such systems should be in charge of guiding empires and nations.

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development in the Ottoman imagination, 1908–23. Modern Asian Studies, 50 (6), 1846-1887 (2016). Thomas Kuehn, *Empire, Islam, and Politics of Difference: Ottoman Rule in Yemen, 1849-1919* (Boston: Brill, 2011)

[100] Hanioğlu, *Young Turks*, 7-32.

[101] Leo Marx, "The Idea of 'Technology' and Postmodern Pessimism," in *Does Technology Drive History? The Dilemma of Technological Determinism,* eds. Merritt Roe Smith and Leo Marx (Cambridge: MIT Press, 1994)

By focusing on the work practices of the Ottoman telegraph corps, it becomes possible to see some of the actual mechanisms behind the emergence of technocratic authority in the empire. As Ottoman society became more dependent on telegraphic communication—and the Ottoman telegraph network became integral to the global network—it became increasingly difficult to separate the state's ability to manage a technical network from its overall legitimacy. Through cultivating expertise and disciplining operators, the Ottoman state sought to both create a strong network and to bolster faith in that network, within and beyond the borders of the empire. As a result of these practices, a unique class of telegraphic professionals emerged whose authority rested on possessing universal knowledge and being disciplined attendants of the empire's telecommunication network.

CHAPTER TWO
Electrical Boundaries: Telegraphy and Territorial Sovereignty

Introduction

On February 27, 1866 the British House of Commons held a hearing on the condition of the newly established Anglo-Indian telegraph line. Upon its completion in 1865, enthusiasts of the line had claimed that it would be revolutionary, allowing British merchants and officials in the metropole to communicate with British India with "magical celerity." But rather than bringing progress, the parliamentary speakers complained that the telegraph had brought only disappointment and financial loss. They argued that extensive delays and garbled messages made the telegraph network much less reliable than the old-fashioned postal system. Even worse, the critics lamented that the problems stemmed not from the line's technology but from its geography, as much of the infrastructure lay beyond British control in the Ottoman Empire:

> If it is asked how all of these miscarriages occur, the reply will not be far to seek. From England to India is a long way, and though mere distance is annihilated by electricity, that is only on condition that electricity has a fair chance…A message to India passes through seven different administrations, more or less manageable, the worst of all being the Turkish. When a dispatch gets into Turkey it is impossible to say what may become of it.[1]

The disgruntled speakers called for British operators on Ottoman soil, viewing their fellow countrymen as the only way to save the precious new gift of rapid communication with India.

These irritated parliamentarians had stumbled upon two defining characteristics of the electrical telegraph as it developed in the mid-nineteenth century. First, the technology was bound to the specific lands through which it traversed and thus colored by the particularities of local politics and physical geographies. Second, the telegraph was nothing if not a network

[1] BOA HR/ID/1675/18, "Parliamentary Intelligence, House of Commons," *The Times*, February 27, 1866.

technology, constituted by a system of cables whose reach stretched beyond the command of any single group. While British parliamentarians and businessmen howled for more power over the Anglo-Indian telegraph line, the Ottoman authorities refused to cede control. Instead, the Ottoman telegraph administration defended its right to manage the empire's infrastructure, asserting territorial sovereignty in the face of greater entanglement with a newly interconnected world.

This chapter examines the ways in which the Ottoman telegraph network was connected to the practice and discourse of territorial sovereignty in the empire. This understanding of sovereignty, which continues to define modern geopolitics, was based on the principles of well-defined borders and the singular right of the Ottoman state to control activities within those borders. These principles were closely connected to the development of an imperial telegraph network that was both grounded in the local environment and embedded in an international system. Drawing on administrative maps, technical manuals, and diplomatic correspondence regarding Anglo-Indian traffic, this chapter analyzes Ottoman efforts to manage and control telegraphic infrastructure in the empire and examines how those practices were connected to the dynamics of the technology.

My argument is two-fold. First, as a landed technology (meaning fixed to a particular place) the telegraph contributed to a heightened awareness of territory and the need for clearly marking and managing space in the empire. Imperial space transformed from a nebulous concept to a bounded site of state sovereignty, as the Ottoman administration developed and managed the empire-wide system. Second, as a network technology (meaning embedded in a larger system) the telegraph was of value and concern to parties *beyond* the borders of the empire. From its inception, the Ottoman telegraph network was of keen interest to foreign actors, particularly the

British Empire, which viewed the network as a communications highway to colonies in India. As a result, the Ottoman telegraph administration frequently found itself facing demands and criticism about how it managed infrastructure in its own territory. In these frictional encounters, the administration increasingly adopted a discourse that emphasized its authority to control infrastructure in Ottoman territory, even if those lines were used internationally. Together, these two aspects of telegraphy contributed to the territorialization of sovereignty in the empire, as the state increasingly turned to managing space as a means of controlling infrastructure.

Borders and Boundary Objects

Before examining the intersection of political and technological boundaries, it is useful to recall the historical nature of territorial sovereignty. As scholars of critical geography and geopolitics have demonstrated, the idea of territorial sovereignty—in which sovereignty is defined as the right to control activities in a fixed, geographic space—is a distinctly modern phenomenon.[2] The envisioning of the world as a finite plot of territory, constituted by cleanly divided, territorially-defined states, was the result of a long process that crystalized in the nineteenth century. Many scholars point to imperialism as the primary catalyst for this peculiar perspective, arguing that efforts to control resources and the pressures of inter-imperial rivalries led to an image of the world as a prize to be possessed or carved up.[3] Similarly, others have revealed the close

[2] For a discussion of the development of territorial sovereignty, see John Agnew, *Geopolitics: Re-visioning World Politics* (London: Routledge, 1998); Charles S. Maier, "Transformations of Territoriality 1600-2000," in *Transnational Geschichte: Themen, Tendenzen Und* Theorien, eds. Oliver Janz, Sebastian Conrad, and Gunilla Budde (Gottingen: Vandenhoeck & Ruprecht, 2006); and Janice E. Thomson, *Mercenaries, Pirates, and Sovereigns: State-building and Extraterritorial Violence in Early Modern Europe* (Princeton: Princeton University Press, 1994).

[3] Eric Hobsbawm, *The Age of Empire, 1875-1914* (New York: Vintage Books, 1989), 59; Robert McCorquodale and Raul Pangalangan, "Pushing Back the Limitations of Territorial Boundaries," *European Journal of International Law* 12, no. 5 (2001): 867-888

connection between territorial loss—both imagined and material—and the emergence of nationalist discourses that fixated on the integrity and quantity of a nation's territory.[4] While scholars have recognized the role of technological infrastructure in advancing imperialist projects and state centralization, few have examined the telegraph's role in bolstering the very principles of territorial sovereignty.[5] To borrow the phrasing of Gabrielle Hecht, this chapter shows how telegraphy was not merely a tool for defending territorial sovereignty, but was actually a mode for its practice.[6]

The Ottoman Empire offers a particularly interesting site for examining the relationship between this new technology and the emergent discourse of territorial sovereignty. As in western Europe, in the mid-seventeenth century the foundation of Ottoman sovereignty began to shift away from the person of the sultan toward the management of a demarcated territory and its corresponding populations.[7] While there is still debate over why exactly this transition took place, it is agreed that this discursive change led to a stronger state as rulers were able to justify more invasive and exploitive practices of their land and people. As Sabri Ateş argues in his work on the borderlands between the Ottoman Empire and Qajar Iran, the process of building state

[4] See Firoozeh Kashani-Sabet, *Frontier Fictions: Shaping the Iranian Nation, 1804-1946* (Princeton: Princeton University Press, 1999); Benjamin Fortna, "Change in the School Maps of the Late Ottoman Empire," *Imago Mundi* 57, no. 1 (2005): 23-34

[5] Daniel Headrick's work represents the primary example of technology as a tool of imperialism. See Daniel Headrick, *The Invisible Weapon: Telecommunications and International Politics, 1851-1945* (New York: Oxford University Press, 1991); and *The Tools of Empire: Technology and European Imperialism* (New York: Oxford University Press, 1981). For examination of the role of the telegraph in enabling political centralization and expanding the state's "decision space," see Charles Maier, *Once Within Borders* (Cambridge: Harvard University Press, 2016) 190-191

[6] Gabrielle Hecht, *Entangled Geographies: Empire and Technopolitics in the Global Cold War* (Cambridge: MIT Press, 2011), Introduction

[7] Sabri Ateş, *The Ottoman-Iranian Borderlands: Making a Boundary, 1843-1914* (New York: Cambridge University Press, 2013), 4

capacity (including surveillance, standardization, and institution building) was intimately connected with the reification of borders. Comparing a state's border to a filter, Ateş argues that the increased production and penetration of state power in the Ottoman Empire led to a hardening of the once porous screen that separated Ottoman from non-Ottoman territory.[8] As neighboring states strengthened their capacities to exert control throughout their territories, spaces and social practices that had been fluid were increasingly understood in the binary categories of imperial possession.

The development of the Ottoman telegraph network was part of this state-building process. Telegraphic infrastructure brought with it a new bureaucracy, new institutions, and new standards to be carried out throughout the empire. Following Ateş's argument, this alone meant that the development of a telegraph network was connected to the emergence of territorial sovereignty in the empire. However, there were two particular aspects of the telegraph system, and of the technology itself, that made it a contributing catalyst for territoriality in the empire.

First, as a landed technology, the telegraph required the building of fixed stations and lines. While the space between Istanbul and Baghdad encompassed tens of thousands of square miles, telegraphic communication between the two points could be boiled down to one fixed line, a handful of stations, and the operators who conveyed the messages. The immobility of the technology meant that it was intimately associated with place, and demanded that those who controlled the infrastructure also manage the surrounding space. This was a new phenomenon in the empire. Before the telegraph, Ottoman communications had relied on a courier network known as the *menzil*, which was a flexible system of routes and locally-managed rest stations

[8] Ibid., 10

that did not need any continuous or uniform road.[9] As a result, the vast telegraph network marked the first time that hundreds of locations in the empire were connected by contiguous infrastructure that needed to be built, maintained and protected by the central state. Indeed, if the physical infrastructure were not already a symbol of the new territorial control of the central government, Ottoman telegraph poles were often topped with a decorative crescent, demonstrating how the infrastructure provided a physical site for advertising Ottoman authority throughout the vast territory.[10]

Second, unlike a gun, book, or bicycle, the technology of the telegraph demanded a network, requiring at a minimum two nodes and one line in between. As such, the technology was not just the individual telegraph apparatus, but rather the larger network comprising nodes, wires, operators, and long stretches of terrain and diverse inhabitants. Thus, while it was common to speak of the Ottoman, British, or Russian telegraph networks, those clean terms belied the actual, messy interconnectedness of the technology. Furthermore, as the telegraph network expanded, it also created new points of vulnerabilities for the parties involved: if there were one break in the chain, then the technology would fail. As a result, the telegraph network presented a temptation, and indeed a platform, for exerting power and influence into foreign societies. Overall, the tension between the need for integrity within the network and the absence of complete political control over the system produced conflict between those wanting to control infrastructure beyond their borders and those seeking to defend their territorial integrity.

[9] Yusuf Halaçoğlu, *Osmanlilarda Ulaşim ver Haberleşme (Menziller)* (Ilgi Kultur Sanat Yayincilik: Istanbul, 2014)

[10] References to these decorative lines can be found in Aziz Akincan, *Turkiye'de Posta ve Telgrafciklik*. (Istanbul: Ulku Basimevi, 1946), 13, and *Telgraf ve Posta Estatisque,* 1316 (1900) AK ISTKA/2012/BIL/233

For this reason, the telegraph was inherently political, engendering contention but requiring cooperation in a newly connected globe. This should not be confused with the assertion that there was a particular type of politics—such as nationalism or imperialism—embedded in the technology, as some have claimed.[11] Rather than determining a particular type of politics in the late nineteenth century, the telegraph was a "flexible" technology, meaning it was compatible with practices of British imperialism and Ottoman defensive developmentalism.[12]

In recognizing that the Ottoman telegraph network was a shared object that produced alternate meanings for Ottoman and British actors, I suggest that we view the infrastructure as a boundary object. First coined by Susan Leigh Star and James R. Griesemer, this term refers to the ability of objects or entities to have a plurality of meanings for different users while still maintaining a degree of fixed structure.[13] This notion allows for a flexible reading of the telegraph's role in shaping nineteenth century Ottoman practices, as the technology not only strengthened the Ottoman state but also further embedded the empire into the British imperial network.

[11] This technologically-deterministic approach holds that certain technologies embody a particular type of politics, and thus the mere presence of the technology will bring about a certain set of political consequences. Headrick's work has encouraged this notion regarding the telegraph and imperialism, arguing that the telegraph in the non-Western world, including the Ottoman Empire, was inherently a tool of European dominance and control. See Headrick, *Invisible Weapon* and *Tools of Empire.*

[12] For more on the question of politics and technologies and the possibility of flexible technologies, see Langdon Winner, "Do Artifacts Have Politics?," *Daedalus* 109, no. 1, *Modern Technology: Problem or Opportunity?* (Winter 1980): 121-136.

[13] Susan Leigh Star and James L. Griesemer, "Institutional Ecology, 'Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39" *Social Studies of Science* 19, no. 3 (August 1989): 387-420

In this light, it becomes clear that the telegraph was not exclusively an instrument for Ottoman state-building or for foreign imperialism, as previous scholars have concluded.[14] Rather than focusing on the intentions of actors, it is more fruitful to analyze the interactions and conflicts within the larger technological and geopolitical system. By viewing the Ottoman telegraph network as a boundary object, it becomes possible to see the emergence of territorial sovereignty not as a motivating concern, but as the outcome of a contested, friction-filled process.

Grounding Invisible Power

> *The electric messenger gallops along the thread up in the air. It runs, pouring forth without a sound, just like rays from the sun. It flies on earth and sea, just as lightning flies in the sky.*[15]
>
> – Issa Iskandir Ma'luf, 1911

For some observers of telegraphy, there was a distinct lightness and agility to the technology. Like the author of this Ottoman-Arabic poem, many were inspired by the speed and magic of electricity, which silently and invisibly whisked information across great swaths of terrain. Telegrams, like lightning bolts and rays of sun, appeared unrestrained in their speed and reach.

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[14] For arguments on the telegraph as a tool of state-building and territorial consolidation, see Eugene Rogan, *Frontiers of State in the Late Ottoman Empire: Transjordan, 1850-1921* (Cambridge: Cambridge University Press, 1999) and E. Thomas. Ewing, "'A Most Powerful Instrument for a Despot: The Telegraph as a Trans-National Instrument of Imperial Control and Political Mobilization in the Middle East,' in *The Nation State and Beyond: Governing Globalization Processes in the Nineteenth and Twentieth Centuries*, ed. Roland Wenzlhuemer and Isabelle Lohr (Berlin: Springer, 2013); For arguments on the telegraph as a tool of empire, see Headrick's *Invisible Weapon* and *Tools of Empire.*

[15] Issa Iskandir Ma'luf, "Al-Telgraf*,"* in *Al Muqtabas,* Vol. 5, Issue 6, 1910-1911, my translation. The poem is also printed anonymously in Jamal al-Qasimi, *Irshad al-Khalk ila al-aml bi-khaber al-barq.* (Al-Muktabus Press, 1329), 80. My thanks to Vanessa Ogle, whose reference to the anonymous version of the poem helped me to discover the original work. See Vanessa Ogle, *The Global Transformation of Time.* (Cambridge: Harvard University Press 2015), 253.

They represented an unprecedented type of mobility, in which communication seemed liberated from the limitations of physical transportation.

While inspiring, this image of unbridled telecommunication belied the restricted reality of telegraphic infrastructure. Telegrams did not actually radiate into space, but rather were shunted down particular, pre-defined paths. The invisible, mobile power of electricity depended on visible, immobile accessories: unbroken lines of copper wire, heavy wooden poles, and porcelain insulators, not to mention hundreds of stations filled with workers. By 1885, the Ottoman network consisted of 19,240 miles of lines and 550 stations, manned by more than 2,000 telegraphers, proving that this supposedly ephemeral technology came with a large footprint.[16] This infrastructure intimately tied the telegraph to the land and raised questions not only about who owned the technology, but also who controlled the surrounding terrain. For an empire that had long operated through the use of intermediaries and indirect rule, a contiguous network of imperial infrastructure introduced new practices and priorities for how the Ottoman state engaged with imperial space.

Most immediately, constructed lines required surveillance, protection, and maintenance—all of which depended on the presence of Ottoman telegraph inspectors (*müfettişler)*. Assigned to particular telegraph districts, these centrally-appointed inspectors in turn hired guards from the local population, known as *çavuşlar*, who were responsible for monitoring and repairing lines in a given area. While these guards were recruited locally, they were nonetheless full employees of the telegraph administration, and the central directorship was involved in any decision to fire or replace them.[17] As a result, these telegraph çavuşlar marked a

[16] *Posta ve Telgraf Mecmuasi*, June 1888; AK ISTKA/2012/BIL/233, No. 8, *Telgraf ve Posta Estatisque,* 1316 (1900)

[17] SALT 384/TEL/1893, No. 4, Telegraph Construction and Maintenance Manual, 1893

departure from the traditional Ottoman practice of *derbend,* in which local inhabitants were given tax breaks in order to protect and safeguard remote mountain passes.[18]

The number of inspectors and guards working in each telegraph district depended on the amount of time it took to tour particular sections of the network, an estimation that included consideration for both distance as well as ease of access. Inspectors in areas with good roads and railway were responsible for covering more ground than those surveilling lines in mountainous or otherwise remote areas. Similarly, areas that were prone to strong wind and storms also had more inspectors, as lines in these areas were particularly prone to damage.[19] In addition to monitoring and repairing lines, these inspectors also managed the local environment, trimming branches and felling trees that posed a threat to the infrastructure.[20] This intimate engagement with the empire's physical landscape required a thorough knowledge of terrain, and as a result, employees of the telegraph administration were trained in both the geography of the empire and in land surveying techniques.[21]

The intensification of an imperial presence along the telegraph lines also emerged from the state's attempt to thwart threats from human actors. Part of this threat stemmed from the fact that the wooden poles and metal wires represented valuable resources: wood was a rare luxury in the plains and deserts of the empire, and the wires could be used for a range of purposes, such as binding bundles and fashioning stirrups.[22] In order to deter these acts of pilfering, the Ottoman

[18] For more on the derbend system, see Cengiz Orhonlu, Osmanlı İmparatorluğu'nda Derbend Teşkilâtı (Istanbul: Eren, 1990).

[19] SALT 384/TEL/1893, No. 5, Telegraph Construction and Maintenance Manual, 1893.

[20] Ibid.

[21] Said Olgun, "Posta ve Telgraf Mektebi Talimatnamesi," *Yakin Donem Turkiye Arastirmalari* 1, no. 2 (2014), 156

[22] "De l'etablissement des lignes pour le service international: Turquie." *Journal Telegraphique,* No. 23, September 25, 1871, ITU Archive; Goldsmid, *Telegraph and Travel,* 85

state augmented its direct monitoring of the lines with an indirect method: issuing payments to local tribes in exchange for the promise of additional protection of the state infrastructure.[23]

However, there were also more antagonistic threats that prompted a harsher response from the state. During the first decade of telegraphic development, Arab and Kurdish tribes in eastern Anatolia and Ottoman Iraq targeted the imperial lines not as a means to secure resources, but rather to sabotage the technology's centralizing effects and to send a message of protest against the intruding government.[24] As a number of scholars have described, the Ottoman state's attempt to extend its authority into the empire's internal "frontier zones" had brought it into conflict with resident tribes, whose autonomy and local rule were undermined by state centralization.[25] Telegraph lines, which were both a tool and a symbol of imperial rule, were a perfect target for tribes seeking to disrupt this process. For instance, the building of the Baghdad-Basra telegraph line (1861-1863) was plagued by attacks by tribes hostile to Ottoman centralization, particularly factions of the Muntafiq and Khaza'il tribes. Due to a string of attacks in 1863, the Ottoman governor of Baghdad, Namik Pasha, dispatched Ottoman troops to protect the infrastructure and to assert imperial authority in the restive region.[26] In the end, the Ottoman

[23] Ebubekir Ceylan, *Ottoman Origins of Modern Iraq: Political Reform, Modernization and the Development of the Nineteenth Century Middle East* (London: I.B. Tauris, 2011), 189; Cem Emrence, *Remapping the Ottoman Middle East*: *Modernity, Imperial Bureaucracy, and the Islamic State* (London: I.B. Tauris, 2012), 85

[24] Soli Shahvar. "Tribes and Telegraphs in Lower Iraq: The Muntafiq and the Baghdad-Basrah Telegraph Line of 1863-65." *Middle Eastern Studies* 39, no. 1 (2003): 89-116.

[25] In his work on the extension of Ottoman state power into Transjordan, Eugene Rogan uses the term "frontier zones" in order to describe parts of the empire where there were "sociopolitical orders apart from the institutions of the Empire at large." In effect, areas such as Eastern Anatolia, Tripolitania, and Arabia were home to established tribal orders that challenged the Ottoman state's modern mission of intensifying power throughout its territory. In particular, the Ottoman military and taxation systems were viewed as an affront to the self-governance of these areas. Rogan, *Frontiers of the State*, 9

[26] Shahvar, "Tribes and Telegraphs," 104

use of force was successful in cowing the rebellious factions and elevating a sheikh, Fahd al-'Ali, who pledged not only to respect the lines but also to punish those who did not.[27]

While sporadic acts of looting and sabotage would continue throughout the age of Ottoman telegraphy, the combination of paying and punishing tribes ultimately enabled the Ottoman state to practice the new norm of territorial management.[28] The building of telegraphic infrastructure and the territorialization of Ottoman sovereignty were mutually-reinforcing, as the building of infrastructure in remote corners demanded and enabled greater imperial control of Ottoman territory. But the different strategies adopted to protect the fixed infrastructure also reflect the contradictions of these practices, as tribes were simultaneously viewed as both threats to and facilitators of a territorialized state with static infrastructure.[29]

Imperial ownership of the lines and the surrounding environment was also reinforced and reflected by abstract systems of organizing and presenting the network. Whenever a telegraph station or line was described or represented, it was always done so in relation to the organizing framework of national boundaries. From 1867-1889, the Ottoman telegraph administration made and distributed at least six maps, all of which situated the web of interconnected nodes within the clearly demarcated borders of the empire.[30] While there were distinctions made in depicting the Ottoman network—such as special markings for planned lines and stations capable of

[27] Ibid., 107

[28] Bedouin attacks would also mark the construction of the Hijaz Telegraph line (1900) See Rogan, *Frontiers of the State,* 64.

[29] For more on the dialectic between the Ottoman state and the empire's nomadic tribes, see Resat Kasaba, *A Moveable Empire: Ottoman Nomads, Migrants, and Refugees* (Seattle: University of Washington Press, 2009)

[30] The maps from 1867, 1869, 1873, 1883, and 1889 can be found in the map collection of the International Telecommunication Union Archive, Geneva, Switzerland. The 1874 map can be found at Ataturk Kitapligi, Istanbul, Photo Collection, DSCN5503.

international messaging—the representations largely projected a uniform identity for the imperial system.

Figure 2.1: Carte Télégraphique de L'Empire Ottoman, 1869. By P. Sebah

Non-Ottoman stations, such as those in Serbia and the Russian Caucasus, were deliberately excluded, resulting in an image of the Ottoman network in artificial isolation from the surrounding network and geography.

This highly territorial and national vision of the telegraph network was also reflected by a linguistic shift in the maps. The 1867 and 1869 maps were written only in French while the maps from 1873, 1883, and 1889 were written in both French and Ottoman Turkish. The introduction of Ottoman Turkish into the maps corresponded with other practices of indigenizing the network and its administration, such as the switch to using only Ottoman Turkish in the official gazette for Ottoman telegraph and postal workers.[31] Over time, the telegraph system became a site for

[31] The gazette, *Posta ve Telgraf Mecmuasi*, had originally been published in both French and Ottoman-Turkish, but switched to only Ottoman Turkish in the 1890s.

defining the empire: a symbol of a new type of sovereignty defined by control of particular territories and the infrastructure that required even the remotest spaces to be mapped and claimed.

This association that telegraphic infrastructure made between place and sovereignty also occurred in the numerous lists and charts devoted to the pricing and regulation of messaging. In particular, practices in international telegraphy required operators to organize physical locations within a notional political hierarchy, in which empires and nation-states were the dominant category.[32] Rates were determined primarily by political boundaries, rather than physical distance. While some countries, like the Ottoman Empire and Russia, were subdivided into multiple telegraphic zones with different rates, these subgroups remained secondary to the larger imperial framework.[33] Through regular updates and bulletins published by the International Telegraph Union, the global telegraph network emerged not as a universal system of equal nodes, but as one defined first and foremost by political boundaries.

These tariff charts and maps represented a newly spatial way of understanding state sovereignty. Specific locations became subsumed within the larger organizing framework of nation-states and empires, and space was flattened and divided into legible boundaries of governmental possession. Through the tunnel vision of telegraphy, these maps and charts rendered the Ottoman Empire a knowable totality: compressing reality into a simple representation that portrayed the empire as discrete and defined by its territory. Like all representations, these depictions were deceptively simple. Underneath the clean lines and

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[32] As an example, see Documents de Conference Télégraphique Internationale de Budapest, 1897, Reglement. ITU Digital Archive

[33] For tariff purposes, the Ottoman Empire was divided into the following regions: European Turkey, Asiatic Turkey, Tripolitaine, Hijaz, Yemen, and Crete.

categories that portrayed a total and monopolistic sovereignty lay a more complex reality of overlapping and often conflicting interests. However, in addressing disputes over control of the infrastructure, the Ottoman state increasingly relied on the logic of territorial sovereignty that these maps and charts projected.

Ambiguous Authority: The Anglo-Ottoman Convention and the Telegraph Station at Fao

From its very inception, the Ottoman telegraph network was simultaneously a national and international project. The British and French militaries first brought the telegraph into Ottoman territory in 1855 during the Crimean War, as the two states sought rapid communication with the battlefront on the Crimean peninsula.[34] As such, the first lines in Ottoman territory were international, connecting the Ottoman city of Varna with both the Austro-Hungarian network and with the British wartime base at Balaklava. Even as the Ottoman telegraph administration developed local lines in the empire, the network remained of interest to foreign powers. In particular, the British maintained a keen interest in the expansion of the Ottoman telegraph network, driven largely by their desire to telegraphically connect with colonial possessions in India.

The 1857 Indian uprising helped transform this British interest into action. The metropole's ignorance of the near catastrophe—which the local authorities ultimately put down—sparked a call for telegraphic communication between London and Calcutta. The quickest route from London to India lay through the Ottoman Empire, which, like most of the world in the 1850s, boasted very few telegraph wires. At that time, the nascent Ottoman network consisted of only a few lines in the empire's European territories. In order to realize the British

[34] For more on the early years of the Ottoman network, see Introduction

dream of inter-imperial communication, the Ottoman network would have to expand across Anatolia to the Persian Gulf, where the land line would connect with a submarine cable that would lead to the British-Indian network.

The Ottoman government was not naïve about the mixed fortune of lying between Great Britain and its colonies in South Asia.[35] On one hand, this position meant that a wealthy country might support and potentially subsidize the building of modern infrastructure within Ottoman territory. On the other hand, this location between the British metropole and periphery meant that a foreign power could come to view Ottoman infrastructure as its own. The proposed Anglo-Indian line was particularly risky given that it was supported by a branch of the British Indian government (the Indo-European Telegraph Department) rather than a private company. Indeed, it is significant that the Ottoman telegraph administration would go on to make many contracts with British private companies (such as the Eastern Telegraph Company) and that these concessions never elicited the same amount of anxiety as the uneasy partnership with the state-run Indo-European Telegraph Department.[36] Despite these concerns, the Ottoman government moved forward with plans to extend their network and create the infrastructure necessary for supporting Anglo-Indian traffic.

The Anglo-Ottoman Convention, signed in 1864, arranged the peculiar terms for this shared infrastructure.[37] As described in the opening of the convention, the shared objective of the two states was to "establish telegraphic communication between their respective states by means of a submarine cable connecting India with the Ottoman territory at the mouth of the Schatt ul-

[35] Soli Shahvar. "Concession Hunting in the Age of Reform: British Companies and the Search for Government Guarantees; Telegraph Concessions through Ottoman Territories, 1855-58." *Middle Eastern Studies* 38, no. 4 (2002)

[36] See Chapter 3 of this dissertation, which examines Ottoman relationship with private telegraph companies.

[37] BOA HR/ID/1675/9, No. 1, Anglo-Ottoman Convention, 1864.

Arab [sic] and thus completing communication with Turkey and other European states."[38] While it is expected that a diplomatic document, which might privilege decorum over frankness, would give a false sense of parity between the two states, it is nonetheless striking that the stated purpose of the telegraph line was to establish communication between the Ottoman and British empires, rather than to connect Great Britain with British India. By this time, Istanbul had been connected to the European network for almost a decade. The real purpose of this convention was to provide a link between the networks in Europe and British India, a connection that would bring far greater benefit to Britain than to the Ottomans.[39] Thus, while the Anglo-Ottoman Treaty was not a capitulation, it was among the many "unequal treaties" that marked Ottoman foreign relations during the nineteenth century.

In Article 1, the convention stated that the Ottoman government would be in charge of continuing—and paying for—the extension of the Ottoman line from Baghdad to the Shatt al-Arab, and that it would also pay to continue this line in the direction of Khanakeen on the Persian border. The article also stated that the Ottoman administration would be responsible for the maintenance and repairs of the Ottoman lines. As for the British Indian government, Article II clarified that it would lay and pay for the submarine cable from Persian Bushire to the mouth of the Shatt al-Arab, where the cable would join the Ottoman terrestrial line.

This section of the agreement was rather straightforward: the Ottomans and the British would each pay for the building and maintenance of the lines in their respective territories or spheres of influence (as with the British in Bushire). However, things became more complicated

[38] Ibid.

[39] This is not to say that the Ottomans would never have an interest in telegraphic communication with South Asia. Scholars are currently investigating the expansion of the Ottoman embassy and consular presence in South and Southeast Asia, a development which greatly depended on the telegraphic network. See Jeffery Dyer's forthcoming dissertation, "The Ottomans in the Age of Empire," Boston College.

with the junction of the two lines at Ottoman Fao on the shore of the Persian Gulf. Was it to be an Ottoman or British station? Article III of the convention laid out the details of this unusual arrangement:

> [the sultan] authorizes the establishment on Ottoman territory, at the mouth of the Schatt-ul-Arab, of a British Telegraphic Office, with a staff which shall not exceed fifty persons, who shall all be placed under the exclusive orders of a British Station Master, and shall be at the expense of the British Government, as likewise the apparatus and all the instruments requisite for working the submarine line.[40]

This article, which suggested that the British would be in charge of the telegraph office at Fao, was tempered by Article IV, which clarified that the British telegraph office would actually be within a larger Ottoman station. Within this building, the British and Ottomans would have a condominium-style of sovereignty in which the two teams maintained separate compartments and shared the cost of the station. When British and Ottoman telegraphers needed to exchange telegrams between the two sides, they would physically pass the messages through a small window.[41]

Article V further strengthened Ottoman control over this British outpost by sharply restricting British telegraphic activity at the shared station and guaranteeing Ottoman management of the operation. After receiving messages from the submarine cable, British telegraphers were to pass on the communication—by hand—to their counterparts at the Ottoman office, who would send the message on into the interior network. The article also clarified that all activity at the "mixed" station was to fall under the direction and purview of the Ottoman telegraph administration.[42]

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[40] BOA HR/ID/1675/9, No. 1, Anglo-Ottoman Convention, 1864.

[41] Ibid.

[42] Ibid.

Despite the efforts to safeguard Ottoman control over British telegraphic activity, it is evident that the overall purpose of this treaty was to privilege British communication. Article VI stated that the Ottoman government would appoint employees who were proficient in English along the Istanbul-Fao line, and that it would also establish a telegraph office at Istanbul that would be devoted to messages coming from India. Even more indicative of the prioritization of British-Indian messages was Article VII, which stated that one of the wires on the Istanbul-Fao route would be "exclusively available for Indo-European messages."[43] However, the incompatible objectives of prioritizing British interests and maintaining Ottoman control would lead to conflict, and the Fao station ultimately became a site for forging Ottoman territorial sovereignty.

Ottoman Territory or British Outpost?

While the convention gave the Ottoman authorities ultimate control over the Fao station and communication into the Ottoman interior, the vagaries of the text combined with the inherent tensions of the shared network soon led to conflict. Just a few years after the establishment of the shared telegraph house, evidence arose that the British were subverting Ottoman regulations, particularly the requirement to use an Ottoman middleman when passing on messages.

In the winter of 1867, the Ottoman government learned that British telegraph officers at Fao had been communicating directly with the British vice-consul at Basra rather than going through the Ottoman telegraph office, as mandated by the convention.[44] The Ottomans filed a complaint regarding this action, and in response, the British acknowledged the transgression but

[43] Ibid.

[44] BOA HR/ID/1675/11, Memo from British Embassy, Constantinople, December 15, 1867.

justified it with the need for confidential communication between the British consul general and the government of India.[45] While the British acknowledged the financial loss that the circumvention had caused the Ottoman administration, they were unapologetic for both the breach of the convention as well as the violation of sovereignty that the action represented. In response, the Ottomans dismissed the British justification of seeking confidentiality, arguing that it was common practice to send messages in secret code.[46] More importantly, the Ottomans asserted, the convention clearly stipulated the use of an Ottoman middleman, and therefore the British had to respect this protocol.[47] While it remains unclear whether the Ottomans were successful in thwarting British efforts to increase autonomy, the record of these infractions and the Ottoman pushback reflects the ways in which the technology was wrapped up in a larger conflict over sovereignty of Ottoman territory.

As early as 1865, the very station at Fao had also developed into a source of tension between the two empires. In particular, Ottoman and British officials clashed over British requests to expand their section of the station. The governor general of the Baghdad and Basra province, Namik Pasha, was particularly wary of these British construction projects, which seemed to further entrench the British presence on Ottoman soil. In his response to one request for expansion from October 1865, Namik Pasha at first denied the petition, expressing his skepticism over whether the British telegraphers actually needed additional space. [48] While he

[45] BOA HR/ID/1675/11, Letter from Feizi, Interim Director General of the Ottoman Telegraph Ministry, to Fuad Pasha, Minister of Foreign Affairs, January 7, 1868.

[46] Ibid.

[47] Ibid.

[48] BOA HR/ID/1675/17, Letter from Namik Pasha to British Consul General at Baghdad, 14 Jamazil Evel 1282 (October 5, 1865).

ultimately permitted the expansion, he remained guarded, insisting that any materials used in the project be procured locally and under the close supervision of Ottoman authorities.[49]

This insistence on the use of Ottoman resources was firm. In a letter dated October 7, 1865, Colonel Kemball (who had by then become the British consul general at Baghdad) complained that the Ottoman governor was still refusing to allow a shipment of construction materials from India, despite the fact that Ottoman engineers themselves had determined local materials to be insufficient for the expansion project. In an exasperated letter, Kemball wrote:

> At the eleventh hour, Namik Pasha refuses the materials, ignores the necessity for the office sanctioned by the Porte, postpones its construction in any case until the bill for the last office dwelling houses shall have been presented and then if an office must be built, promises to undertake its construction with his own resources.[50]

In his letter, Kemball referenced a British flatboat, the "Hyderabad," which had been stationed off the coast of Fao for one year to temporarily house the British telegraph employees while they waited for the expansion of the facility. The British were aware that the presence of this vessel concerned the Ottoman authorities, but they blamed the governor's action for forcing its continued presence. Kemball accused Namik Pasha of showing "extreme jealousy" with regard to the British telegraph administration, a surprisingly sharp critique and one that reveals the competitive atmosphere surrounding the telegraphic infrastructure at Fao.[51]

The confrontation between Namik Pasha and the British continued to escalate to the point that the British ambassador to Istanbul, Richard Lyons, wrote a scathing letter to Ottoman Foreign Minister Ali Pasha, demanding that the Porte address the situation. Describing Namik Pasha's actions as "vexatious," the ambassador not only expressed frustration at the governor's

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[49] Ibid.

[50] BOA HR/ID/1675/17, Letter from Kemball to British Consul General at Baghdad, October 7, 1865.

[51] Ibid.

lack of compliance, but more ominously, he criticized the central government of being either powerless or duplicitous in its dealings. The ambassador refused to engage with the details of the actual disagreement, stating that the unreasonable behavior of the Ottomans had transformed a minor issue into a grave problem.

> Repeated remonstrances on the subject have been addressed to the Sublime Porte by this Embassy, and on each occasion assurances have been received from your Highness that orders had been sent to Namik Pasha to desist from obstructing the work. Five times at least during this period have such orders been sent from the Porte to Namik Pasha. On each occasion, the embassy has accepted your highness' assurances…and rested in the hope that the question was settled. These orders have however been systematically disregarded by Namik Pasha.
>
> It is of course beyond my province to suggest what measures should be taken by the Porte to vindicate its own authority but on the other hand it is my bounded duty not to allow Her Majesty's Embassy to be longer trifled with in so unbecoming a manner.[52]

The ambassador's message was clear: the Ottoman central government must respect British telegraphic rights at Fao, and it must not hide behind local authorities who sabotaged such legitimate activities.

The joint telegraph house at Fao would continue to be a site of conflict between the British and Ottoman empires. In 1887, nearly twenty years after the above incident involving Namik Pasha, the issue of maintenance of the British station returned. On August 21 of that year, the Ottoman mudir (local official) of Fao obstructed the landing of 1,300 stones that were to be used to renovate the British telegraph station. As described by the British embassy in its irritated message to the Sublime Porte, the cargo was part of a larger shipment of 6,000 stones, and the renovation was "a work of necessity and of an unobjectionable kind" according to the terms of the Anglo-Ottoman convention.[53] In particular, the British authorities claimed that the

[52] BOA HR/ID/1675/17, Letter from British Ambassador Lyons to Ottoman Foreign Minister Ali Pasha, November 11, 1865.
[53] BOA HR/ID/1699/65, Verbal Message from British Ambassador to Sublime Porte, October 6, 1887.

renovations were to prevent flooding, and that the treaty not only allowed this work but in fact mandated it. The British stated that they had already received permission from the Ottoman central authorities who were to instruct local officials to allow the work. However, when the ship arrived the local authorities prevented it from bringing its cargo to shore, an action which the British decried as "illegal."[54] In addition to delaying the renovations, the British asserted, the mudir's actions had forced the ship to jettison many of the stones, resulting in a significant financial loss.

The situation at Fao further escalated that fall. After a visit by the British consul at Basra to the Fao station on November 16, 1887, the consul and the British station chief, Mr. Butcher, again requested permission to renovate the station, including masonry work to fix some rotted beams and the building of a dam to prevent flooding at high tide.[55] The Ottoman official who received the request, Hassan Bey (possibly the Ottoman station chief), replied that he would forward the matter to the governor of Basra, but that he could not make the decision on his own. After waiting for an answer, in a meeting on November 28, 1887, the British consul at Basra once again raised the issue with the Ottoman governor. The Ottoman confessed that he had not received the request, but that in any event he deemed most of the renovations to be unnecessary, making quite clear his caution toward British expansion.

Tired of waiting for formal permission to renovate, the British employees at the Fao station took it upon themselves to fortify the walls surrounding the station, using the trunks of date trees. However, the Ottoman officials again intervened, sending a group of soldiers to chop

[54] Ibid.

[55] BOA HR/ID/1699/65, Summary of events at Fao, collected by the British Ambassador, January 5, 1888.

down the trunks and destroy the unapproved fortifications.[56] Outraged, the British ambassador reported the incident to the Sublime Porte, and demanded that the Ottoman authorities uphold the terms of the convention and take action against the local officials who had violated the rights of the British to repair the office.[57]

In a firm but diplomatic reply, the Ottoman foreign minister defended the action of his officials and questioned the legitimacy of the British renovation schemes. He pointed out that the periodic renewal of the British station had "little by little, enlarged the dimensions of the telegraph station," and asserted that the current size of the station was more than sufficient for the British needs.[58] As a means to settle the matter once and for all, the foreign ministry suggested that the Ottomans and British agree to definitively set the size of the house at no more than 2,500 square meters. The Ottoman officials stated that this size was more than sufficient for the needs of the British. Furthermore, the ministry clarified that the building should be maintained in its current state, and that all stone construction was henceforth banned.[59]

The banning of stone construction, as well as the accusation that the British were using renovations as a means to surreptitiously expand their station, reflect an Ottoman concern that the British were using the telegraph station as a means to solidify and fortify their foothold in the Persian Gulf. This defensive stance was understandable given the larger historical developments of the period. As Frederick Anscombe's work has demonstrated, Ottoman preoccupation with asserting sovereignty in the Persian Gulf came as a response to the increasing British presence in

[56] Ibid.

[57] BOA HR/ID/1699/65, Letter from the British Ambassador to Sublime Porte, January 6, 1888.

[58] BOA HR/ID/1699/65, Verbal Message from Ottoman Foreign Ministry to British Ambassador, April, 28, 1888,

[59] Ibid.

the area.[60] While the struggle over telegraphic infrastructure does not play a role in Anscombe's narrative, it is clear that the telegraph station at Fao contributed to the Ottoman government's growing determination to defend its territorial rights. The conflict emerged out of the telegraph network's role as a boundary object, which encouraged British interference in Ottoman lands as well as Ottoman articulation and defense of the empire's territorial rights.

While the conflict at Fao emerged over the ambiguities regarding where the Ottoman network ended and the British one began, there were also disputes over the management of infrastructure that was explicitly in the Ottoman network. These conflicts reveal a central component of the emerging discourse of territorial sovereignty: states did not merely have the right to manage infrastructure in their territory, but they also had a responsibility to do so. The weight of this responsibility would influence calculations about new projects and motivate Ottoman efforts to present its telegraph administrators as equal to their international counterparts.

National Infrastructure and International Interests

The extension of the imperial telegraph network brought the Ottoman authorities new responsibilities for managing remote corners of the empire. As a technology that required absolute network integrity, the telegraph cast the size of the empire in stark relief, both for the Ottomans themselves and their British telegraphic clients. In the fall of 1865, just a few months after the completion of the Istanbul-Fao line, the British public began to complain about the

[60] Frederick Anscombe, *The Ottoman Gulf: The Creation of Kuwait, Saudi Arabia, and Qatar* (New York: Columbia University Press, 1997); Also see Gokhan Cetinsaya, *The Ottoman Administration of Iraq. 1890-1908*. (Routledge: New York, 2011)

quality of the Ottoman network and to question whether Ottoman administrators could manage their own infrastructure.

The community of British cotton merchants and businessmen was particularly concerned. In a letter written by the Manchester Chamber of Commerce to British Foreign Secretary Earl Russell, the board members spoke of the great potential of Anglo-Indian communication, a promise that had been replaced by disappointment due to the alleged incompetence of the Ottoman telegraph administration.[61] This purported ineptitude had not only resulted in delays and missed messages, but even in financial damage due to errors in transmission.[62] The authors stated that they had "reason to believe that the inefficiency complained of is mainly attributable to that portion of the line which is conducted under the authority of the Turkish Government."[63] While the authors did not present the evidence for this claim, they nonetheless requested that the foreign ministry "cause an energetic remonstrance" to the Ottoman government, demanding an investigation into the state of the network.[64] The chamber asserted that this inquiry would be the first step to fixing the problem and ensuring the endurance of Anglo-Indian telegraphic communication:

> To secure for the future (so far as the authority of the Turkish government extends) that strict accuracy and expedition in the transmission of Telegraphic Messages between this country and India which the public has a right to demand.[65]

[61] BOA HR/ID/1675/16, Letter from Manchester Chamber of Commerce to British Foreign Secretary Early Russell, September 1, 1865.

[62] Ibid.

[63] Ibid.

[64] Ibid.

[65] Ibid.

The authors' concern about the extent of Ottoman authority is particularly striking, and likely has multiple meanings. First, it implies a skepticism over the effectiveness of the Ottoman authorities within the borders of the empire.[66] Second, it reflects a perceived uncertainty regarding the future of the Ottoman state, a view that served as the basis for the "Eastern Question."[67] Both interpretations have a basis in the historical context, and both provide an interesting vantage point from which to view the technology. The creation of a global infrastructure network, where ownership and usership did not perfectly overlap, engendered a world where the ability of individual governments to meticulously manage their territory became an issue of global concern. Just as the British viewed the Ottoman Tanzimat reforms as an issue of British interest, so too did they come to view the Ottoman telegraph network as a British problem. What happened in Ottoman territory was no longer an issue for the Ottomans alone, but rather it was now the issue of anyone invested in Indo-European telegraphic communication.

The Ottomans were aware of this drawback to owning the conduit between Great Britain and British India. While this ownership was financially beneficial, it also brought new pressure to manage the empire's vast territory and, if the Ottomans failed, the threat of foreign interference. This perspective is made clear in an exchange regarding a proposed concession for Paul Julius Reuter to build an alternative line for Anglo-Indian traffic in Ottoman territory. In response to British demands for more reliable telegraphic communication with India, Reuter proposed in 1866 the building of an alternative line from London to Baghdad, by way of Istanbul. From Baghdad, the line would then connect to the Persian network and on to British

[66] Interestingly enough, the Ottomans did not dispute the suggestion that they had trouble exerting authority throughout the empire. In fact, the term "turbulent tribes" became a frequent excuse for delays and interruptions on the Istanbul-Baghdad line. See BOA HR/ID/1675/13, Letter from Director Agaton to Ali Pasha, May 24, 1866.

[67] For background on the Eastern Question and its role in shaping European policy toward the Ottoman Empire, see A. L. Macfie. The Eastern Question, 1774-1923. (London and New York: Longman, 1996.)

India. The proposed line in Ottoman territory would be state property, but it would be exclusive to Anglo-Indian traffic. Importantly, the line would not stop at the many Ottoman towns and cities along the way, but would rather act as an express lane for British communication through Ottoman territory. Reuter argued that the delays and errors of the current line were the result of retransmissions at the many stops in Anatolia, and thus the new, high-speed line would be less prone to bottlenecks and error.[68]

The Ottoman ambassador in London supported the proposal, arguing that it was not politically or financially injurious to the Ottomans and that it would be well-received by the British public.[69] However, the Ottoman telegraph director, Agaton Pasha, objected to the project. Born in Istanbul to an Armenian family from Anatolia, Agaton "Krikor" Pasha (1823-1863) was a seasoned Ottoman statesman and diplomat who had served in a number of governmental posts before his appointment to the telegraph department, including positions in agriculture, trade, and the treasury.[70] Serving as telegraph director from 1864-1868, Agaton played an important role in both growing the Ottoman network and in asserting the Ottoman state's telegraphic sovereignty on the world stage. Under his watch, the Ottoman Empire joined the International Telegraph Union in 1865, and in his engagements with the British, he was vocal in insisting on his government's right to dictating the terms of telegraphic development.

In reviewing Reuter's proposal, Agaton rejected the foundational claim that it was the many stops that caused the old line's problems. Instead, Agaton argued that the delays were the

[68] BOA HR/ID/1675/13, Copy of Reuter Proposal for Constantinople-Baghdad Telegraph Line, April 7, 1866.

[69] BOA HR/ID/1675/13, Letter from Ottoman Ambassador Musurus in London to Ottoman Foreign Minister Ali Pasha, April 12, 1866.

[70] Tanrikut, *Türkiye'de Posta ve Telgraf ve Telefon Tarihi ve Teşkilat ve Mevzuatı,* 710.

result of the hostile environs and "turbulent tribes" that menaced the infrastructure.[71] As previously discussed, the Ottoman telegraph lines were not accompanied by rail, and thus it was a constant challenge for the administration to guard the lines and repair any damaged sections. Since it was the surroundings, and not the stops, that were the cause of delay, Agaton questioned the advantage of this new line. If built, he argued, the new line would be subject to the same difficult conditions as the current infrastructure. And since the new line would be in Ottoman territory, it would continue to fall on the Ottoman administration to protect the line, even though it was not serving imperial interests.[72] This territorial responsibility would offer burden without benefit, and thus the exclusive line was more trouble than it was worth. Ultimately Agaton's view held the day, and the Ottoman foreign ministry rejected the Reuter concession.

In refusing the concession, the Ottoman Empire exercised its right to manage territorial infrastructure as it saw fit, regardless of the interests of outside parties. The expansion of telegraphic infrastructure had outpaced the central government's ability to exert power in the peripheries of the empire, but that did not mean that the state had any less sovereignty over those areas. In the exchange over the Reuter concession, the Ottomans framed their position around the simple assertion of having primacy in their own territory. However, in other instances, the Ottoman telegraph administration mediated claims to territorial sovereignty with a discourse of technical ability, recognizing that national sovereignty was strengthened by, if not conditioned on, the presence of national expertise.

[71] BOA HR/ID/1675/13, Letter from Director Agaton to Ali Pasha, May 24, 1866.

[72] Ibid.

Territorialized Technicians

In the mid-nineteenth century, telegraphic technology was dependent on clerks who were responsible for receiving and re-transmitting messages. As anyone who has played the game of telephone knows, even a minor error in transmission could swiftly cascade into a sea of miscommunication. As a result, the British-Ottoman debate over control of telegraphic infrastructure was not limited to the technology itself, but also extended to the issue of personnel and management in Ottoman territory.

In the same parliamentary session that opened this chapter, a number of speakers shared horror stories of local businesses that had foundered over botched orders and miscommunications over the stock exchange. In one case, 1,000 bales of cotton transformed into 21,000 bales, an error that brought financial ruin to the company involved.[73] The issue, the parliamentarians argued, was not the distance of the lines but rather who ran them. Using the example of the United States, whose telegraphic network succeeded despite its size, the parliamentarians stated that any distance could be conquered as long as there was political unity and linguistic homogeneity. The problem with the Anglo-Indian line was that it lacked both. In particular, the parliamentarians blamed the Ottoman administration and its "Turkish" clerks for butchering these messages, bemoaning their poor English skills and work ethic.[74]

The British also asserted that there were poor management practices throughout the Ottoman telegraph administration, including patronage, underpaying of employees, understaffing, and failure to provide proper incentives and encouragement for good

[73] BOA HR/ID/1675/18, "Parliamentary Intelligence, House of Commons," *The Times*, February 27, 1866.

[74] Ibid.

performance.[75] Much of the criticism focused on the Pera office in Istanbul, which the British targeted as an example of the poor management style that bled the network of competent workers. Writing to the Ottoman foreign minister, the British ambassador reported:

> The service of the Indian Line, especially the Pera office, is stated to be very unsatisfactory, and the present superintendent of that office, who I am assured, is one of their best, most energetic and conscientious men, meets with very little encouragement in his endeavors to improve the service of the line to India. His staff is underpaid. He has only three badly paid manipulators, and eight unpaid supernumeraries, who cannot be expected to do the work with proper spirit and energy without remuneration. As soon as one of the supernumeraries becomes accustomed and well up in the Indian work, he is removed.[76]

The British ambassador protested that rather than making the Pera station a "prize" for clerks, due to its status as a busy and lucrative office, the Ottoman administration had neglected it and overlooked its employees for promotion, forcing them to seek relocation.[77] Overall, the ambassador found the Ottoman telegraph administration to be in need of a lesson in bureaucratic management:

> It is very desirable for the good working of this important line that every encouragement should be given to make appointments a reward to good clerks, instead of a punishment. The employees should all be properly paid, and their work should not be left to unpaid supernumeraries.[78]

British frustration with the Ottoman telegraph corps only grew, and in an 1868 report, the Indo-European telegraph director, Colonel Goldsmid, claimed that poor employee performance was the primary cause of delays. He questioned the Ottoman administration's insistence that technical breakdowns and heavy traffic had caused the backlog, arguing that it was solely due to

[75] BOA HR/ID/1675/16, English memo, unknown author, unknown date.

[76] BOA HR/ID/1675/16, Letter to Ali Pasha from British ambassador to Constantinople, Henry Bulwer, August 23, 1865.

[77] Ibid.

[78] Ibid.

the poor work ethic of employees. In quoting the work of his subordinate, a W. Bresher, Goldsmid offered the following description of Ottoman telegraph workers:

> Clerks arranging their duties as they like…only when they feel disposed…there being no check of the way in which work is done, no power in the hands of station chiefs to enforce regularity or discipline, no real knowledge at headquarters of how things are going, except as complaints come in and no interference or control attempted except when outside pressure produces a few momentary fits and starts![79]

Some British officials even went so far as to suggest that the cleanest solution would be for Europeans to manage Ottoman lines, asserting that the former simply had a better understanding of the technology. In one 1865 memo discussing the troubled Ottoman lines, an anonymous British author wrote:

> (It is requested) that the inspectors be European, as experience has shown that wherever European inspectors have been employed, the interruptions have been much less frequent.[80]

This indirect statement very directly conveyed British conviction of technological superiority over the Ottomans, an assumption that was a common theme in European colonial encounters.[81] It should be a European who inspected the lines, and it was they, the British, who were able to spot unfair and inefficient labor practices. To the British, the Ottoman telegraph network was nothing more than an extension of the British and European network, and thus it should be managed by those who best understood the technology.

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[79] BOA HR/ID/1675/30, Letter from Colonel Goldsmid, February 14, 1868.

[80] BOA HR/ID/1675/16, Anonymous English memo, 1865.

[81] See M. Adas, *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance* (Ithaca: Cornell University Press, 1990); G. Prakash, *Another Reason Science and the Imagination of Modern India.* (Princeton, NJ: Princeton University Press, 1999) David Arnold, *Science, Technology, and Medicine in Colonial India* (Cambridge: Cambridge University Press, 2000), Timothy Mitchell, *Rule of Experts: Egypt, Techno-Politics, Modernity*. (Berkeley: University of California Press, 2002); On Barak, *On Time: Technology and Temporality in Modern Egypt*. (Berkeley: University of California Press, 2013)

Expectedly, the Ottoman telegraph administration bristled at the British criticism of how it managed its employees, and firmly rejected the suggestion of outsourcing control over imperial infrastructure. As described in chapter one, the Ottoman administration took pains to assert the equality of its telegraph corps with others around the world. In a letter from the Ottoman telegraph director, Feizi Bey, to the Ottoman foreign minister, the director expressed indignation at the charges of having incompetent workers, stating that the accusation deserved no consideration and must be rejected as baseless. He went on to state that the rumors of poor worker practice had originated from a former employee of the Gallipoli de la Levant Submarine Telegraph Company, and thus were not representative of the Ottoman telegraph administration.[82] The director described his employees as some of the most tenacious and capable men in all of Ottoman public service. He boasted that they had even received praise from Edward Hughes, an inventor whose telegraph machines had been adopted within the Ottoman system.[83]

In defending the quality of their staff and management practices, the Ottomans even took a swing at the British administration. In a rebuttal to the 1865 claim of Ottoman tardiness on the lines, the Ottoman foreign minister pointed out that the Indian portion had also seen its own share of delays.

> We have viewed the report of the Chamber of Commerce of Karachi, presented to the assembly in June, which, among other complaints on the state of the line between Karachi and Bombay, declared that a telegram took longer between these two points than it did to arrive from there (Karachi) to London.[84]

[82] BOA HR/ID/1675/31, Letter from Feizi Bey, director of the Ottoman Telegraph Ministry, to Fuad Pasha, Minister of Foreign Affairs, March 28, 1868.

[83] Ibid.

[84] BOA HR/ID/1675/16, Ali Pasha to British Ambassador, 1865

By pointing out that messages took longer between the points of Bombay and Karachi than between Karachi and London, the minister claimed that it was not the Ottoman portion of the lines that were to blame for the delay.

Taking this one step further, Ottoman Telegraph Director Agaton actually surveyed a sample of 90 messages sent over four days in 1865 to challenge the claim that it was the Ottoman lines that were responsible for delays. In painstaking detail, Agaton measured the precise time it took for messages to travel over British lines between India and Fao, and then over Ottoman lines from Fao to the European frontiers. After cleanly demarcating Ottoman lines from British lines, he determined that messages in fact took longer on the British section of the route (2 days, 1 hour and 56 minutes versus 1 day, 3 hours and 35 minutes).[85] With this precise measurement of both time and space, he conveyed to the British that the Ottoman administration was committed to being a careful custodian of international communication.

Additionally, Agaton claimed that those 90 messages had arrived at Fao in a state of near incomprehensibility.[86] Thus, he suggested that the various errors in translation and transmission should not be blamed on the Ottomans—whom the British accused of not knowing English—but rather on the British transmitters on the Indian line and in the Fao office. In support of this, Agaton reflected proudly on the high performance of the Ottoman telegraphers.

> It gives me pleasure to relate that the mentioned 90 messages were made up of 2,351 words, and 61 of those messages were received without any alteration, and 29 with 61 errors. It should also be noted that two of those telegrams were composed exclusively of conventional words (colloquial) and for this reason subject to misinterpretation, and (these) were responsible for 20 of the errors. So, in reality it was closer to 41 errors for 27 messages.[87]

[85] BOA HR/ID/1675/16, Report from Agaton Pasha to Ali Pasha, November 21, 1865.

[86] Ibid.

[87] Ibid.

According to Agaton's calculations, two-thirds of the messages were error free, and for the other one-third, there were less than 2 errors per message. While this may seem considerable to today's reader, Agaton was clearly implying that this was a comparatively strong performance, particularly in light of the poor quality in which the messages had arrived.[88] His subtext was clear: Ottoman telegraphers were capable and the Ottoman telegraph administration was carefully and fastidiously managing telegraphic operations within its territory. This prickly response should come as no surprise, given the undertone of technical superiority embedded in the British statements.

In a sense, we can understand the British criticisms and clamor for control as an attempt to mark an expertise boundary along national lines.[89] Despite Ottoman claims, the British did not believe that the Ottoman telegraph operators belonged in the community of experts.[90] Rather, they believed that the technology should be left to those who had the best knowledge, regardless of geography. For the Ottomans, who resented the increasing interference of the British in their telegraph administration, it was not enough to merely insist on their right to control activities within their borders. Instead, the Ottomans turned to the competence of their administration as a secondary reason for maintaining control over infrastructure in their territory, suggesting that this expertise was central to the evolving framework of territorial sovereignty.

[88] Agaton did not explain what the Ottomans operators did with the messages that they supposedly received in an "incomprehensible state." It is possible that they merely passed them on as such, potentially worsening an already deteriorating state of communication.

[89] See Thomas F. Gieryn, "Boundary-Work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists," *American Sociological Review* 48, no. 6 (Dec., 1983): 781-795.

[90] See Chapter 1 for more on the Ottoman cultivation of telegraphic expertise

Conclusion

One of the paradoxes of Ottoman defensive developmentalism was that the building of infrastructure, which was intended to save the beleaguered empire, also served to further integrate it into a European-dominated world. Viewing the Ottoman telegraph network as a boundary object allows for this contradiction and demonstrates the importance of looking beyond the mere intentions behind any technological system. For while the telegraph was a means for the Ottomans to further centralize control within the empire, it also served as a mechanism for entangling the empire into a world bounded by technology and governed by British imperial interests. In other words, the telegraph may have contributed to the emergent discourse of territorial sovereignty in the empire, but it also provided a platform for practices that revealed such sovereignty to be an unachievable ideal.

In addition, the story of the Ottoman telegraph network has implications for our understanding of the complex British-Ottoman relationship in the post-Crimean period. Not only were the British and the Ottomans tied together by their mutual suspicion and animosity toward an expansionist Russia, but also by their shared investment in Ottoman telegraphy. Unfortunately for both parties, the shared investment did not translate into a common understanding of how to control the infrastructure, and the telegraph proved to be a source of much conflict, suspicion, and frustration amid official cooperation.

This conflict would only increase in the age of high imperialism, as the Ottomans became increasingly concerned about maintaining control of infrastructure in the face of overt European aggression.[91] While the Hijaz railway (1900-1914) is the most famous example of the Ottoman

[91] In his work examining the effects of the "Scramble for Africa" on Ottoman-British relations, Mostafa Minawi argues that practices of high imperialism encouraged the Ottomans to lessen their technological dependence on British technology and infrastructure, a process which I argue began much earlier. See Mostafa Minawi,

government's amplified determination to undertake its own infrastructural projects, this defiance also extended to telegraphic projects.[92] In particular, the Ottoman effort to telegraphically connect Damascus and Medina (1900) was accompanied by a discourse of imperial sovereignty and grandeur, as evidenced by the towering monument built in Marja Square in Damascus to celebrate the finished line.[93] This symbol of the empire's telegraphic prowess, which is discussed more in chapter four, stands as a visual culmination of the decades-long process in which the building and operation of telegraphic infrastructure became tied to the discourse and practice of territorial sovereignty.

While the practices surrounding territorial sovereignty and the telegraph were subtler in the earlier period, they were nonetheless critical for the convergence of notions of sovereignty and control of territorial infrastructure. They suggest a new Ottoman conception of empire, one that privileged control and management of territory as both a symbol and means of state sovereignty. This new periodization suggests that British-Ottoman conflicts over telegraphy may have played a role in the straining of relations even before the British occupation of Egypt and the Scramble for Africa, events that are currently seen as catalysts for the Ottoman turn inward and toward Germany for support with infrastructural projects.[94]

"Telegraphs and Territoriality in Ottoman Africa and Arabia during the Age of High Imperialism," *Journal of Balkan and Near Eastern Studies* 18, no. 6 (2016): 567-587.

[92] Murat Özyüksel, *The Hejaz Railway and the Ottoman Empire: Modernity, Industrialisation and Ottoman Decline.* (I.B.Tauris: London. 2014), Chapter 3

[93] Klaus Kreiser, "Public Monuments in Turkey and Egypt 1840-1916," in *Muqarnas: An Annual on the Visual Culture of the Islamic World.* Vol. 14, ed. Gulru Necipoglu, (Leiden: Brill, 1997) 111

[94] For more on the Ottoman turn toward Germany for infrastructural support, see Michael E. Bonine, "The Introduction of Railroads in the Eastern Mediterranean: Economic and Social Impacts," in *The Syrian Land: Processes of Integration and Fragmentation: Bilad Al-Sham from the 18th to the 20th century*, ed. Thomas Philipp and Birgit Schaebler (Stuttgart: Steiner, 1998).

Lastly, in these nineteenth century debates over the national sovereignty of internationally-utilized infrastructure, we can see foreshadowing of twentieth century conflict. Diplomatic crises and outright war over a nation's right to control such technologies as cables, canals, straights, and oil fields reflect the unanswered question of how to square the idea of territorial sovereignty with the reality of transnational interests and hegemony. After all, the flat depictions of territorial authority found on maps have never reflected the uneven truths present in historical and contemporary hierarchies of power. Rather, there has always been a conflict between the promise of territorial sovereignty and the reality of an interconnected world. The Ottoman telegraph network sat precisely at this intersection, and as a result the technology contributed to the tensions of a modern world marked by both the global flow of information, goods, and people, and the rigid boundaries of modern states.

CHAPTER THREE
Entangled: The Eastern Telegraph Company and Ottoman Society

Introduction

In 1890, a British electrician by the name of H.W. Ansell visited the Ottoman telegraph station at Jeddah on the Red Sea. He was the chief electrician on the *Chiltern,* a British cable ship belonging to the Eastern Telegraph Company, and he was in town to repair the Ottoman submarine cable that connected Jeddah to Suakin in East Africa. During his time at the modest station, which comprised a forty-eight square foot corrugated iron structure and surrounding stone wall, Ansell created a series of water color paintings that offer a rare glimpse into life at the remote outpost. While some capture the interior of the building, most focus on the station's relation to the outside world. In one, a figure sits under a parasol on the roof of the structure; while his face is obscured, his hands peek out from the shade, holding a mirror and flashing a heliograph to a distant ship on the horizon. Another takes the perspective from the water, placing the station in the middle of a vast desert landscape, connected to the world only by a terrestrial telegraph line that continues off the canvas, and by a chain of porters standing knee deep in the water, carrying supplies ashore.[1] The final painting reveals the true subject of Ansell's work: the submerged cable. In it, a crew of men in a rowboat haul the long cable up from the water. One of them waves a bright red flag, signaling the successful cutting of the line in preparation for its repair.

[1] POR DOC/3/119, "Sketches on Djedda Cable Repair," by H.W. Ansell, January 1890.

Figure 3.1: Untitled painting from “Sketches on Djedda Cable Repair” by H.W. Ansell

While Ansell may have taken some creative license in his sketches, his paintings and his presence at Jeddah reveal an important aspect of the story of Ottoman telegraphy: the intimate role of submarine cable companies in the imperial network. The Ottoman government owned the Jeddah-Suakin line, but it had relied on the Eastern Telegraph Company to lay it in 1882 and to maintain it in the following decades. In spite of the Ottoman state’s desire to fully control telegraphic activity in the empire, the imperial telegraph administration had been compelled to partner with foreign, private entities to build and operate the underwater sections of its telegraph network.[2] While the Ottoman government continued to own some of these lines, such as the

[2] In considering concessions for the proposed Euphrates Valley Project, Fuat Pasha expressed to the Ottoman council of ministers that company management of terrestrial lines was counter to the principle of government control of telegraphy in the Ottoman Empire. See Soli Shahvar. "Concession Hunting in the Age of Reform: British

Jeddah line, most of the submarine cables in the empire's waters were actually owned by these companies. By the turn of the twentieth century, the largest of these firms, the Eastern Telegraph Company, owned twenty-two of the forty-two submarine cables in the empire.[3] In addition, the company had also established twenty-five stations throughout the Ottoman coastlines of the Aegean, Mediterranean, Black, and Red Seas.

With this infrastructure came influence in shaping the contours of Ottoman telegraphy, even though the private cables represented just a fraction of the Ottoman network. The British firm hired local employees, procured space for stations and staff quarters, and depended on local sources for fuel, water, and food. More broadly, the Eastern Telegraph Company was closely involved with the Ottoman telegraph administration, which simultaneously depended on the company for operating portions of the imperial network, regulated the laying of company lines, and competed with the company for a share of the Indo-European telegraph market. As the two major telegraphic actors within the empire, the company and the Ottoman state shaped each other's technical, social, and financial practices, producing a relationship that was defined primarily by interdependency and mutual-influence rather than autonomy or unilateral authority.

By connecting company records with sources from the imperial administration, this chapter reveals the interactions and dependencies between the Eastern Telegraph Company and the imperial telegraph administration. Drawing on the STS framework of actor-network theory, it argues that submarine telegraphy prompted an entangled relationship between Ottoman society and the foreign company, whereby Ottoman actors shaped and affected company practice and the

Companies and the Search for Government Guarantees; Telegraph Concessions through Ottoman Territories, 1855-58." Middle Eastern Studies 38, no. 4 (2002),179

[3] SALT 384/Tel/C/1, No. 21, Telgraf ve Posta Nezareti Saltanat-ı Seniye-ı Telgraf Merakizine Mahsus Resmi Rehberdir, August 1905. The Ottoman government owned 19 of the lines, 6 of which were in Istanbul waterways; 1 cable, connecting Fao-Bushire, was owned by the Indo-European Telegraph Administration.

company mediated the Ottoman state's emergence as a telegraphic power. By exploring the links between the Eastern Telegraph Company and the expanding technical bureaucracy, this chapter offers a case study on the power and limitations of European capital in late Ottoman society, and shows how telegraphic infrastructure bound together the public and private and the foreign and domestic.

Foreign Capital and State Power

Private companies played a role in the story of Ottoman telegraphy from its very beginning. In 1855, the Electric Telegraph Company and R.S. Newall and Co. laid the empire's first submarine cable—which was also the empire's first telegraph line—from the Crimean peninsula to the Black Sea port of Varna.[4] Initiated by the British military as part of the Crimean war effort, the Balaklava-Varna line was the longest submarine cable of its time, and it provided swift communication between the battlefront on the Crimean peninsula and the military leadership and war-interested public in London and Paris.[5]

With the success of the Black Sea cable, it was not long before cable entrepreneurs flocked to the Ottoman government for concessions to lay other submarine lines terminating in the empire. Frequently backed by the political support and financial subsidy of the British government—which was eager to establish a telegraphic connection with India—these companies vied to be early entrants in a new market. While underwater cables were more technically challenging than terrestrial lines, their location away from potential saboteurs and

[4] Ken Beauchamp, *History of Telegraphy* (London: The Institution of Electrical Engineers, 2001), 107 and 145

[5] Roderic Davison, "The Advent of the Electric Telegraph in the Ottoman Empire," in *Essays in Ottoman and Turkish History, 1774-1923: The Impact of the West.* Austin: University of Texas Press, 1990, 134. The submarine cable stretched 352 miles (550 kilometers) under the Black Sea from the British military camp on the Crimean peninsula to Ottoman Varna where land lines connected the city to the European telegraph network.

meddling governments made them relatively attractive investments. The Red Sea offered one particularly appealing location for an Indo-European line, and it proved to be a prime site of interest for submarine cable entrepreneurs. After winning a stiff competition for both the Ottoman concession and British financing of the line, the Red Sea Telegraph Company laid a cable connecting Suez to Karachi over the winter of 1858-59.[6] However, the line failed mere months after its completion, bringing great disappointment to those who had put their faith in the technology and even greater financial loss to the British government, which had sunk significant funds into the project.[7] As the unlucky investors learned, the early technology for submarine cables was not suitable for the depth and the distance demanded by these ambitious schemes. It was not until after 1865 with the success of the transatlantic cable that submarine telegraphy regained its status as a worthy and viable investment.[8]

With the support of a newly-discovered insulation material (Gutta-percha) and improved ships that could bear the unwieldy cables, foreign cable companies returned to Ottoman lands in pursuit of opportunity. The timing could not have been better. The Ottoman government, having undertaken a long series of reforms during the first half of the century, was now firmly on the path of centralizing its power. The promise of rapid communication to provinces in North Africa and southern Europe was compelling, particularly given the new demands of modern warfare and governance.[9] And while the Ottoman telegraph administration sought to have total control of

[6] Soli Shahvar. "Concession Hunting in the Age of Reform,"182

[7] Yakup Bektas, "The Sultan's Messenger: Cultural Constructions of Ottoman Telegraphy, 1847-1880," in *Technology and Culture* 41, no. 4 (Oct 2000), 677

[8] Simone M. Müller, *Wiring the World: The Social and Cultural Creation of Global Telegraph Networks* (New York: Columbia University Press, 2016), Introduction

[9] See E. Thomas Ewing, ""A Most Powerful Instrument for a Despot: The Telegraph as a Trans-National Instrument of Imperial Control and Political Mobilization in the Middle East," in *The Nation State and Beyond: Governing Globalization Processes in the Nineteenth and Twentieth Centuries,* ed. Roland Wenzlhuemer and

terrestrial lines, the technical complexity, cost, and risk of deep-water submarine cables drove the administration to turn to foreign firms for the underwater portions of its network. Partnering with a slew of companies, such as Newall and Company, Telegraph Construction and Maintenance Company, and the Black Sea Telegraph Company, the Ottoman government commissioned the building of forty-one submarine cables across its coastal waters during the last four decades of the nineteenth century.[10] Nineteen of these lines were owned by the Ottoman government, and twenty-two of them belonged to the foreign companies that built them.[11] By 1905, the Eastern Telegraph Company had acquired all of these privately owned cables, reflecting its status as the world's largest submarine cable firm with possession of nearly half of all oceanic cables.[12]

The Ottoman state's engagement with these foreign cable companies represents an early example of the many public-private partnerships that would mark the empire's infrastructural development in the nineteenth century. While the empire's early-modern infrastructural projects, such as the building of canals and public fountains, had been financed and implemented by Ottoman actors, the infrastructural projects of the modern period were predominately the products of concerted effort between the imperial state and European companies.[13] This change

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Isabelle Lohr (Berlin: Springer, 2013); Mostafa Minawi, "Lines in the Sand: The Ottoman Empire's Policies of Expansion and Consolidation on its African and Arabian Frontiers (1882-1902)." (PhD diss., New York University, 2011), 34

[10] SALT 384/Tel/C/1, Telgraf ve Posta Nezareti Saltanat-I Seniye-I Telgraf Merakizine Mahsus Resmi Rehberdir, August 1905.

[11] In addition, there was also one line, connecting Fao to Bushire, that belonged to the Indo-European Telegraph Department, part of the British Indian administration. In total, there were 42 submarine cables in Ottoman waters.

[12] Daniel Headrick, "The Invisible Weapon: Telecommunications and International Politics, 1851-1945 (Oxford University Press, 1991), 39

[13] For works dealing with Ottoman infrastructural projects in the early modern period, see Alan Mikhail, *Nature and Empire in Ottoman Egypt: An Environmental History* (New York: Cambridge University Press, 2011); Shirine Hamadeh, *The City's Pleasures: Istanbul in the Eighteenth Century* (Seattle: University of Washington Press, 2008)

occurred for a number of separate but related reasons: changes in Ottoman law—made in part under pressure from European states—that encouraged European companies to operate and invest in the empire; the emergence of Europe as an exporter of new technologies and industrial methods; and a new trend among Ottoman statesmen and administrators to employ European innovations in their efforts to reform and industrialize the empire. From the laying of railway track to the digging of deep-water ports, British, French, and German companies helped forge the transportation and communication links that shaped the modern empire.

While these public-private partnerships were indisputably transformative of Ottoman society, the exact nature of their effects are the subject of ongoing debate. On one hand, these links contributed to social and political fragmentation in the empire and its economic peripheralization in the world: older commercial and transportation practices were disrupted, the empire's agricultural and population resources were oriented toward the global market rather than local needs, and foreign firms gained an outsized amount of influence in Ottoman society.[14] On the other hand, these infrastructural links were also crucial for the process of state centralization and imperial consolidation, providing the imperial government with a means to mobilize and extract resources, extend state power into the periphery, and shore up defenses against foreign aggression.[15]

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[14] Donald Quataert, *Social Disintegration and Popular Resistance in the Ottoman Empire, 1881-1908* (New York: New York University Press, 1983); Resat Kasaba, *The Ottoman Empire and the World Economy* (Albany: SUNY Press, 1988); Sevket Pamuk, *The Ottoman Empire and European Capitalism, 1820-1913: Trade, Investment, and Production* (New York: Cambridge University Press, 1987); Zeynep Celik, *The Remaking of Istanbul: Portrait of an Ottoman City in the Nineteenth Century* (Berkeley: University of California Press, 1986)

[15] Necla Geyikdagi, *Foreign Investment in the Ottoman Empire: International Trade and Relations, 1854-1914* (New York: Tauris Academic Studies, 2011); Murat Birdal, *The Political Economy of Ottoman Public Debt: Insolvency and European Financial Control in the Late 19th Century* (London: I.B. Tauris, 2010). Murat Özyüksel, *The Berlin-Baghdad Railway and the Ottoman Empire: Industrialization, Imperialism, Germany and the Middle East* (New York: I.B. Tauris, 2016)

Understanding the paradoxical effect of foreign-backed infrastructure is made more difficult by two assumptions that preclude the possibility of symbiosis, however limited, between the Ottoman state and foreign, private companies. First, there remains an overriding belief in the connection between state power and the ownership of infrastructure. Most associated with the work of Michael Mann, this theory holds that modern states derive much of their autonomy and power from maintaining control over infrastructure, which allows them to extend political authority throughout a defined territory. Conversely, weak states are those that have either outsourced control over infrastructure or which have never fully developed such systems.[16]

The second factor that obscures the history of European capital in Ottoman infrastructure is the eventual defeat and dismemberment of the Ottoman Empire by European powers. This later development casts a long shadow over the nineteenth century, leading European financiers and companies to be viewed as Trojan horses of eventual aggression.[17] As part of this narrative, the history of European capital in the empire has typically been presented as a story of coercion and "penetration," rendering the Ottoman state and society as little more than passive recipients of western European dominance. While recent scholarship on the Ottoman Public Debt Administration has complicated this picture by revealing the active role of the Ottoman state in mediating and encouraging the flow of European capital in the empire,[18] most scholarship on

[16] Michael Mann, "The Autonomous Power of the State: Its Origins, Mechanisms and Results," *European Journal of Sociology /Archives Européennes De Sociologie / Europäisches Archiv Für Soziologie* 25, no. 2 (1984): 185–213.

[17] For works that present foreign-backed infrastructure as a source of imperial power, see Mostafa Minawi, "Telegraphs and Territoriality in Ottoman Africa and Arabia during the Age of High Imperialism," *Journal of Balkan and Near Eastern Studies* 18, no. 6 (2016): 567-587; On Barak, *On Time: Technology and Temporality in Modern Egypt* (Berkeley: University of California Press, 2013); Sean McMeekin, *The Berlin-Baghdad Express: The Ottoman Empire and Germany's Bid for World Power* (Cambridge: Belknap Press, 2010); Clarence B. Davis, Kenneth Wilburn, and Ronald Robinson, *Railway Imperialism* (New York: Greenwood Press, 1991)

[18] For more on the role of the state in the integration of the Ottoman economy into the European-dominated world market, see Pamuk: *The Ottoman Empire and European Capitalism*; Birdal, *The Political Economy of Ottoman Public Debt*; Ali Coskun Tuncer, *Sovereign Debt and International Financial Control: The Middle East and the Balkans, 1870-1914* (London: Palgrave Macmillan, 2015)

European financing of Ottoman infrastructure positions the phenomenon as a loss of state sovereignty and a precursor to foreign intervention.[19] This is partially due to the predominance of rail infrastructure in the literature, a history that was marked by predatory concessions that resulted in the independence and enrichment of European companies at the expense of the Ottoman state.[20]

In comparison to the extensive literature on rail, there are few studies on the role of submarine cable companies in the empire.[21] And while concessions for rail and telegraph lines are often mentioned in the same breath, there were important differences in how these systems emerged in the Ottoman Empire, departures that suggest that different power dynamics were at play in the relationship between the state and the private companies involved. The most important difference was that the telegraph network in the Ottoman Empire was predominately a state-run enterprise: the privately owned cables were a supplement to this network, rather than constitutive of it. This was very different from the rail scenario, in which there was no real state rail system. Instead, up until the Hijaz Railway of 1908, the entire rail network in the empire was a conglomeration of privately owned and managed lines.

This distinction is important in that the Ottoman state was in a much stronger position with regard to the cable companies than with the railway firms. This difference manifested itself

[19] This perspective is represented by Donald Quataert's work on partnerships between the Ottoman government and foreign companies, by which he described: "At the moment it signed a concession permitting the operation of a European company, the Ottoman government seemed to be surrendering another group of subjects to the jurisdiction of foreigners." Quataert, *Social Disintegration and Popular Resistance*, 10

[20] On the history of railroad concessions in the empire, see Charles Issawi, *The Economic History of Turkey 1800-1914* (Chicago: University of Chicago, 1980); Roger Owen, *The Middle East and the World Economy*, 1800-1914 (New York: I.B. Tauris, 1993); Murat Özyüksel, *The Berlin-Baghdad Railway and the Ottoman Empire: Industrialization, Imperialism, Germany and the Middle East* (New York: I.B. Tauris, 2016)

[21] Two notable exceptions that briefly examine the role of foreign companies in Ottoman telegraphy are Shahvar, "Concession Hunting in the Age of Reform," and Minawi, "Telegraphs and Territoriality."

in two ways. First, the financial terms for the cables typically positioned the companies as contractors rather than as entities that had purchased rights in Ottoman territory. As a representative example, in the 1870 concession to the Newall Company for the laying of a series of cables in the Aegean, the Ottoman government provided a fixed subsidy for the building of submarine lines, to be returned in case of cable failure, and did not provide any additional payments or financial guarantees for the company.[22] In contrast, rail concessions were granted or sold to companies, and they typically included "kilometric guarantees:" a contractual term that required the government to make up shortfalls in expected profit, as long as the company ran a certain number of trains on a given track.[23]

Second, as will be further described, submarine cable concessions did not grant companies significant autonomy, but rather required the close coordination between company employees and the Ottoman telegraph administration. This was not the case with rail concessions, which often granted companies discretion over critical aspects of building the lines, such as route selection and decisions over materials and personnel.[24] As a result, while the Eastern Telegraph Company played a role in shaping Ottoman telegraphy, it never achieved the same degree of autonomy or financial leverage that the railroad companies developed. Instead, it was just one of many actors that determined the social and technical dynamics of telegraphic infrastructure in the empire.

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[22] I use here the contract for the Ottoman Archipelago, discussed in further detail in this paper. POR DOC/ETC/1/84, Ottoman Archipelago Concession, November 28, 1870.

[23] These payouts proved to be quite expensive in the end: in 1899, the Ottoman government paid private rail companies 900,000 pounds in kilometric guarantees, or approximately five percent of total government spending. See Owen, *The Middle East and the World Economy,* 197 and 214.

[24] Owen, *The Middle East and the World Economy,* 113

Thus, a new framework is needed for understanding the dynamic between the company and the Ottoman state, one which both acknowledges the company's influence in Ottoman society as well as the state's agency in determining underwater infrastructural development.[25] Toward this end, this chapter argues that the relationship between the technology, the state, and the private company be understood as a network of actors. First proposed by Bruno Latour and Michel Callon, actor-network theory (ANT) offers a useful analytical framework that emphasizes the interactions, associations, and dependencies between different actors (human and non-human) that superficially appear to be distinct and opposite entities, such as "state" and "company." For instance, when asked to explain the relationship between technology and society—which have historically been treated as separate entities that never overlap—ANT theorists unpacked the categories of "technological" and "social" and revealed each to be comprised of complex socio-technical networks.[26] By uncovering the links and connections between supposedly opposite categories, the ANT framework challenges the assumption of ontological binaries in the social sciences, whether they be "technology" and "society," or "human" and "non-human."

As a result, ANT presents a useful framework for critically examining any network in which the involved actors mutually construct and inform their connections. By emphasizing the relationship between two supposedly discreet entities, it focuses on the "making" of the object of

[25] Owen, *The Middle East and the World Economy,* 113

[26] See Michel Callon, "Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St Brieuc Bay," in *Power, Action and Belief: A New Sociology of Knowledge,* ed. John Law (London: Routledge & Kegan Paul, 1986), 196–233; Callon, "The Sociology of an Actor-Network: The Case of the Electric Vehicle," in *Mapping the Dynamics of Science and Technology,* ed. Michel Callon and John Law (Palgrave Macmillan, London, 1986); and Bruno Latour, *Science in Action: How to Follow Scientists and Engineers through Society* (Cambridge: Harvard University Press, 1987)

study—whether it be a technology, industry, or idea—rather than the end result.[27] In the case of Ottoman submarine telegraphy, this approach allows us to focus on the shifting nature of the relationship between the state and the private company, which at various times included partnership, competition, and even coercion. Similarly, by emphasizing the links between the company and the Ottoman state, this framework more accurately reflects the overlaps between the traditionally juxtaposed categories of public and private, and foreign and domestic.

By examining the interconnections between the company and the Ottoman government in the "making" of the underwater network—including laying cables, running stations, managing financial matters, and protecting telegraphic infrastructure—it becomes clear that the company not only influenced the Ottoman state's practices, but that Ottoman society also shaped the company's behavior. As a result, submarine telegraphy emerges neither as a story of pure foreign domination, nor one of total "indigenous" control. Rather, the Ottoman state's partnership with the foreign company both expanded the power of the Ottoman state, through its enablement of empire-wide communication, and created new links between Ottoman society and British capital and technical practices.[28]

[27] Darryl Cressman, "A Brief Overview of Actor-Network Theory: Punctualization, Heterogeneous Engineering and Translation," Unpublished Article from ACT Lab/Centre for Policy Research on Science & Technology (CPROST) Seminar, April 2009

[28] By emphasizing the negotiated and co-constructed nature of the relationship between the Ottoman state and the British submarine cable companies, I seek to offer an alternative framework to that presented by advocates of World Systems Theory, in which the Ottoman Empire is presented as a peripheralized entity in the European-dominated world order of the nineteenth century. See Immanuel Wallerstein, *The Modern World System.* (New York: Academic Press, 1974); Huri Islamoglu-Inan, *The Ottoman Empire and the World Economy* (Cambridge: Cambridge University Press, 1987). Roger Owen, *The Middle East in the World Economy, 1800-1914.* (New York: Methuen & Co, 1981); and Reşat Kasaba, *The Ottoman Empire and the World Economy: The Nineteenth Century.* (Albany: SUNY Press, 1988)

Station Life

Before examining the bidirectional relationship between the company and the Ottoman state, it is useful to first understand the more quotidian ways in which the company became embedded in Ottoman society. While the high cost of telegrams—particularly those sent via underwater cables—limited the company's engagement with the general Ottoman public, the Eastern Telegraph Company nonetheless engaged with local populations and environments through operating stations and hiring Ottoman employees.

Financial records from the company demonstrate this dependency on the local society. The Eastern Telegraph Company rented space for its stations and staff quarters from both the Ottoman state and private landowners; relied on local resources for food, water, and fuel; and even buried its dead in local cemeteries. Company telegraphers, caught up in the unrelenting pace of telegraphic work, turned to local cooks as well as laundrymen to help them with their domestic needs. The company also paid for subscriptions to local newspapers, such as the *Cercle de Salonique* and the *Levant Herald*; budgeted for regular donations to local charities; and retained local physicians to attend to the medical needs of staff. [29]

The company also hired local employees to work as telegraphers, line inspectors, and messengers. While local company employees were treated separately from their British counterparts, in many regards they had similar rights and obligations. The company required both sets of employees to take secrecy oaths, and it forbade all employees from engaging in any acts of business investment or speculation while in company service. Local employees, as with British employees, were also subject to fines and docked pay for lost messages, erroneous

[29] POR DOC/ETC/2/31, Financial Memoranda, Eastern Telegraph Company Limited. C.D. Adye, Reports for Tripoli, Candia, and Canea Stations, September 1907.

repetitions or corrections, word omissions, and errors in station name.[30] In contrast to British employees, who were hired for five year periods, Ottoman employees were hired for indefinite periods of time, subject to the needs of the company. However, like British employees, Ottoman employees were also entitled to prior notice for termination, and in lieu of such notice, a severance package of one month's pay.[31]

In addition, the status of being a local employee did not automatically connote subordination. While in most cases local employees of the Eastern Telegraph Company worked under the supervision of British staff, in the Salonica and Dardanelles station Ottoman employees managed the entire operation.[32] Furthermore, when Ottoman employees worked alongside British telegraphers, they often did so as equals and even as companions. A tragic story of the murder of two company employees in Candia (Heraklion) in Ottoman Crete gives insight into the social dynamics of station life. In the early days of the 1889 uprisings in Crete, two company telegraphers, one British and one Ottoman, were murdered while out for an evening stroll together. In reporting the tragedy, a British colleague of the deceased described how the practice of walking together had become critical for providing some exercise and diversion from the tedium of eight-hour shifts.[33] On this occasion, the prolonged absence of the two employees had raised concern, leading to a search party and the discovery of their bodies. While it is unclear whether the deceased were the victims of a botched robbery—as suspected at

[30] POR DOC/ETC/5/184, No. 26, Eastern Telegraph Company Rule Book. London, 1883.

[31] Ibid., 20

[32] POR DOC/ETC/2/31, Financial Memoranda, Eastern Telegraph Company Limited. C.D. Adye, Reports for Dardanelles and Salonica Stations, September 1907.

[33] POR DOC/ETC/5/123, Letter from H.E. Blanchard to Mr. Halpin, February 1, 1889.

the time—or the political violence that would eventually engulf the island, their untimely deaths provide a record of the collegiality that existed at times between British and Ottoman staff.

Thus, while the company was largely restricted to the coastal environs of the empire, the daily needs and practices of operating stations and managing personnel generated a number of links between the Eastern Telegraph Company and Ottoman society on a local level. In the parlance of actor-network theory, these connections provide evidence of the company's "enrollment" in the social and technical network of Ottoman telegraphy. In turn, these local connections were mirrored on a systemic level, whereby the Ottoman state and the British company mutually shaped each other's efforts to build and manage telegraphic infrastructure in the empire.

Imperial Influence

In 1878, Harry Pender of the Eastern Telegraph Company traveled to Cyprus to oversee the establishment of a submarine cable on the shore of the Ottoman territory. As recalled by his mother, Emma Pender, the young Pender boasted of his superhuman power in dictating the direction of infrastructure in Ottoman lands. His mother wrote, "As Harry said of his commission, he went out as a prophet to announce…where new cities would be raised over the land, where the earth would pour out riches, and where the seas would cast up treasure."[34]

While Pender may have viewed himself and his company as having sole control over submarine cables in Ottoman territory, the reality was more complicated. Despite having a monopoly on the technical expertise needed to lay submarine cables, British companies were not given a free hand in the construction of lines or operation of stations in Ottoman territory. From

[34] Simone Müller, *Wiring the World,* 161

the laying of cables to the delivery of messages, the imperial administration played a role in shaping the day-to-day practices of the company.

In many of the concessions granted, the Ottoman telegraph administration laid out the technical specifications of the planned infrastructure and required that its own personnel conduct inspections to confirm that these specifications were met. An example of this can be found in the 1870 contract between the Ottoman government and the Newall Company (later acquired by the Eastern Telegraph Company) for the laying and operation of a series of cables connecting six points in the Ottoman Aegean.[35] Referred to as the "Ottoman Archipelago" in company records, the concession brought the company exclusive rights for submarine communication in these locations, and was to last for fifty years. For its part, the Ottoman government was to subsidize the project with a one-time payment of 41,000 pounds, under the condition that it would also be allowed to use the lines at no additional cost.[36]

The concession stipulated the technical and material components of the cables, making clear that the company was to work closely with the Ottoman technocrats to ensure that no corners were cut. The contract meticulously identified the three different types of cables that were to be used, including precise descriptions of each model's material, weight, diameter, and structure. All were to share the same core, made up of "seven wires of pure copper put together in a sheaf and weighing 120 English pounds per maritime mile. The envelope serving to inter-isolate the said wires shall be made of three coatings of India-rubber, and shall weigh 150 English pounds per maritime mile, with an outer wrapping of hemp cloth (rope)."[37] For cables

[35] The six lines served the following locations: Canea to Rethimo, Rethimo to Candia, Candia to Cape of Sidero, Cape of Sidero to Island of Scarpantho, Island of Scarpantho to Rhodes, and Chio to Tchesme. See POR DOC/ETC/1/84, "Ottoman Archipelago" Concession, November 28, 1870.

[36] Ibid.

[37] POR DOC/ETC/1/84, "Ottoman Archipelago" Concession, November 28, 1870, Article IV.

placed in areas close to the shore, this core was to be covered with nine iron wires. For those in shallow water (less than 150 meters) the same core was to be used but the external casing was to be made of twelve iron wires. Lastly, for cables used in deep water (exceeding 150 meters) the external envelope was to be made of six iron wires, and covered with a coat of tarred manila.[38]

Demonstrating its interest in international standardization, the Ottoman telegraph administration made a number of demands regarding the quality of the lines. First, it stipulated that the deep-water cables conform with the "American Submarine Cables, which have been ascertained to be the best and the strongest for deep water."[39] Second, the administration also required that the cables have the same electric resistance as the standard used by Siemens in its telegraph network. Third, the company was to guarantee that the lines be capable of transmitting at least fifteen words per minute, via a Morse apparatus manufactured by Siemens.[40]

Having developed its own corps of telegraphic experts, the imperial telegraph administration was also able to confirm that these requirements were met. The company was required to submit samples of all cables to the Ottoman administration in advance of the project, and to afford the Ottoman telegraph engineers with the means to ascertain the origin, composition, and quality of the wires.[41] The administration even required that Ottoman telegraph experts be present on board the laying vessel to act as superintendents of the immersion of the lines and to ensure that the cables used were consistent with the samples presented.[42] As part of

[38] Ibid.

[39] Ibid.

[40] Ibid.

[41] POR DOC/ETC/1/79, Dardanelles-Port Lagos Concession, August 20, 1878, Article VII. This requirement appeared in multiple contracts, indicating that it was a common requirement.

[42] POR DOC/ETC/1/79, "Ottoman Archipelago" Concession, November 28, 1870, Article XIII; Sheikh Sayd-Perim Concession, May 7, 1890, Article V.

their assessment process, those Ottoman engineers also had the right to conduct electrical experiments on the wires to ensure the stipulated conditions were met.[43] For example, twenty-four hours after the laying of the Jeddah-Souakin cable in 1882, Emile Lacoine, the technical director of the Ottoman telegraph administration, measured the length of the cable and tested it for conductor resistance, electrostatic capacity, dielectric resistance, and mean temperature.[44]

The Ottoman administration also required the company to work closely with imperial engineers in selecting landing sites for the cables.[45] This was because it was the telegraph administration that was responsible for building the terrestrial lines connecting the coastal stations to the inland network. As a result, the administration insisted that the decision of where to land the cables be made jointly and not just from the perspective of the company. This attempt by the Ottoman telegraph administration to exert both geographic and technical control over the Eastern Telegraph Company was common practice, and similar language can be found in contracts for stations along the Dardanelles, the Red Sea, and Black Sea.[46]

The influence of the Ottoman telegraph administration also extended into the operation of company stations. Since the administration controlled the terrestrial lines that connected the coastal stations to the interior network, it was necessary for company stations to also house members of the Ottoman telegraph corps. While company management determined the necessary qualifications of these clerks—such as requiring that the appointed Ottoman clerks speak English and French—they did not have the authority to directly supervise or fire them. If there was a

[43] POR DOC/ETC/1/79, "Ottoman Archipelago" Concession, November 28, 1870, Article V

[44] The Telegraphic Journal and Electrical Review, Nov. 4, 1882, 346

[45] POR DOC/ETC/1/79, "Ottoman Archipelago" Concession, November 28, 1870.

[46] POR DOC/ETC/1/79, Odessa-Constantinople Concession, May 26, 1873; Sheikh Sayd-Perim Concession, 1890; Dardanelles-Port Lagos Concession, 1878

cause for complaint, the Eastern Telegraph Company was limited to merely making recommendations to the Ottoman administration regarding the offending clerk's shortcomings.[47]

Similarly, for many company offices, including those in Istanbul, Tripoli, Salonica, and Tenedos, the Ottoman government required that it be those Ottoman telegraph officials who interface with the public. This meant that Ottoman clerks both delivered incoming telegrams to local recipients and managed the front desk where clients came to send new messages.[48] The administration may have relied on these companies for building the infrastructure, but it still managed the public-facing aspects of telegraphy, even for stations that were part of the submarine network.

The Ottoman telegraph administration also sought to minimize company autonomy by requiring the Eastern Telegraph Company to maintain copies of all international traffic sent via its stations and to share those records with the imperial administration. For instance, the 1881 agreement for the submarine line to Chios specified that copies of all communications originating from Chios and destined for Greece be shared with the imperial administration at the end of each week.[49]

The prominent role played by the Ottoman telegraph administration in shaping company operations is also demonstrated by the financial expenditures made by the company to maintain good relations with the Ottoman technocrats. Given that the company was restricted to operating coastal stations, it frequently depended on imperial clerks for forwarding messages on to their final destinations. As a result, any sort of foot-dragging, delay, or backlog on the part of the

[47] POR DOC/ETC/1/79, Letter from Jules Despecher to Feizi Pasha, Constantinople, July 20, 1873.

[48] POR DOC/ETC/1/79, Constantinople Line Agreement, June 15, 1878; Odessa-Constantinople Line Agreement, May 26, 1873, Tripoli Office Agreement, June 29, 1882.

[49] BOA HR/HMS/ISO/234, No. 37, Arrangement between Izzet Effendi and G. Serpos Effendi, February 14, 1881.

Ottoman clerks posed a risk to company business. To minimize this threat and to guarantee that company messages were expeditiously handled by imperial clerks, it was common practice for the Eastern Telegraph Company to make regular payments to the Ottoman telegraph employees who handled company messages. These payments, which company management referred to explicitly as bribes, were so routine that the company actually included them in their station budgets.[50]

However, the company did not leave it to chance alone to ensure that these payments curried favor among the Ottoman operators. For instance, in the Izmir station, the company not only made a point of regularly paying the station chief in order to ensure cooperation and facilitation, but it also made a point of paying another clerk who could report on whether such cooperation was truly happening. As described in a 1902 company memo, the firm found it useful to make regular payments to a Kerope Effendi, who was described as an "old clerk who will always be at the side of the station chief." By providing this clerk with regular payments, the company sought to "see how the station chief is acting" and report if he was doing anything to "injure the company's interest," such as diverting messages away from company lines toward alternate routes.[51]

While this practice of tipping or bribing was intended to further company influence among imperial officials, it could also create more trouble. In the winter of 1902-1903, the officials of the Eastern Telegraph Company found themselves in an awkward situation in Izmir, when they attempted to alter the terms of payment to the Ottoman telegraph employee whom they had been maintaining. The office had been paying the Ottoman telegrapher a regular

[50] POR DOC/ETC/7/52, Anderson Letters, Letter from T.L. Greenwood to R.H. Finnis, September 9, 1902.

[51] Ibid.

installment of five pounds: a bribe intended to facilitate smooth communication between state and company lines and to encourage the Ottoman telegraph administrators to overlook the fact that the company office was not formally approved in the original concession.[52] When the Ottoman official was transferred to a station in Beirut—in keeping with staff rotation practices in the Ottoman telegraph administration—the company saw an opportunity to win the favor of three Ottoman clerks for the price of one. Since the incoming official was none the wiser, the company reduced his bribe to two pounds and divided up the remaining three pounds to two additional Ottoman employees. This scheme worked well until the old official was transferred back from Beirut to Izmir and was indignant to discover that his entitlement had been reduced. In order to avoid any trouble, local management scrambled to gain company approval for an increase in the office budget to support the first Ottoman clerk at his original rate and to continue to pay the two additional employees who had been added to the bill.[53]

From imperial regulations on company infrastructure to the central role played by state clerks in company business, it is clear that the Eastern Telegraph Company did not have the autonomy and omnipotence described in Mr. Pender's claims. Far from being solely determined by the whims of company management, company operations in Ottoman territory were governed in part by the employees and practices of the Ottoman telegraph administration. However, this did not mean that the Ottoman telegraph administration was the dominant power in the public-private partnership. As indicated by the company bribing of Ottoman telegraph officials, the

[52] POR DOC/ETC/7/52, Anderson Letters, Letter from James Anderson to an Unnamed Managing Director. December 31, 1902.

[53] Ibid.

influence of the company stretched well beyond its own activities, directly and indirectly shaping how the Ottoman state managed telegraphic operations and infrastructure in the empire.

Company Influence

While Eastern Telegraph Company infrastructure represented only a fraction of the lines and stations in the Ottoman telegraph network, the influence of the company extended throughout the imperial telegraph system. By acting as both an enabler of Ottoman imperial communication, as well as a competitor that offered alternative routes to the state system, the company had an outsized effect on the development of Ottoman telegraphic practices and imperial governance more broadly.

Most significantly, the company's submarine cables enabled the imperial government to rapidly communicate with areas that had previously been out of immediate reach. By 1885, the Ottoman government had telegraphic access to remote provinces, such as Ottoman Tripoli, the Hijaz, and Yemen, through the workings of these company cables. And the state took full advantage of this access. Of the nearly 1.5 million telegrams sent by the Ottoman government in 1885, approximately 800,000 of them passed through Eastern cables.[54] As a result of the prioritization and discount afforded to government messages in the concessions, company lines were often flooded with government messages, much to the chagrin of company managers. In 1883, company officials threatened to remove the cable that connected Istanbul and Salonica, via Tenedos, as it had been operating at a loss due to extensive, and heavily discounted, government

[54] This number was calculated using the official messages sent in "Oriental Script" to the destinations of Yemen, Tripoli, and Hijaz, all of which used the Eastern lines. Including the Eastern lines in the Aegean, this number would be even higher. See *Posta ve Telgraf Mecmuasi*, August and September 1888

use.[55] During the Crete uprisings in 1889, company officials again complained that the government's intensive use of the submarine cables had all but monopolized the private company's lines, preventing them from being used in correspondence from Europe and Egypt.[56]

Beyond expanding government access into the peripheries of the empire, the presence of the Eastern Telegraph Company infrastructure also shaped the daily practices of Ottoman telegraph clerks. The interconnectedness of state and company lines demanded that Ottoman state clerks be familiar with the costs and protocols of the private firm, both for messages sent within the empire and across its borders. For instance, if an individual in Van wanted to send a message to Lemnos, the message would need to travel over both state and company lines. And while the state clerk would receive the payment for both sections of the utilized infrastructure, he would need to keep track of what portion of the station's income would eventually be transferred to the company.

As a result, the Eastern Telegraph Company featured prominently in the official manuals for the employees of the Ottoman telegraph administration. For instance, there were typically two sets of information for pricing telegrams within the empire: one for state lines, and one for lines owned by the Eastern Telegraph Company.[57] While telegrams sent entirely over state lines ranged in price from 10 paras to 1 piaster per word—depending on the telegram's journey—telegrams sent over company lines cost an additional 20 paras more per word.[58] In addition to word count, the cost of a telegram also depended on the type of message: customers could pay

[55] POR DOC/ETC/1/84, Letter from John Pender to Said Pasha, October 10, 1883.

[56] POR DOC/ETC/1/84, Duplicate Candia-Canea Cable, August 15, 1889.

[57] SALT 384/Tel/C/1, Telgraf ve Posta Nezareti Saltanat-I Seniye-I Telgraf Merakizine Mahsus Resmi Rehberdir, August 1905.

[58] Ibid.

more to include a paid response, acknowledgement of receipt, or a rush transmission. In addition to being responsible for this matrix of information for state lines, Ottoman imperial telegraphers were also required to understand the various costs for telegrams traveling over Eastern lines. For instance, the manual gave clerks separate charts demonstrating the various types of messages and costs for both state routes, such as Beirut to Damascus and Skopje to Istanbul, as well as for routes that included Eastern lines, such as Salonica to Lemnos and Istanbul to the Dardanelles.[59]

The finances of the two entities were also closely linked, and payments to and from the Eastern Telegraph Company became a regular feature of the imperial telegraph administration's records of income and expense. For example, in the 1884-1885 fiscal year, the imperial telegraph administration received a payment of 102,721 piasters from the Eastern Telegraph Company, and it in turn payed the company 92,452 piasters in order to balance the accounts for telegraphic traffic within the empire.[60] By 1895, the total amount of money exchanged between the two administrations had increased and the ratio of debit and credit had reversed, with the Ottoman imperial administration owing the company 126,319 piasters and only receiving 97,384 for internal messages.[61]

The regular balancing of Ottoman accounts also extended to international messages sent via Eastern lines. Interestingly, this category of messages included those sent between the Ottoman Empire and the Ottoman territories of Tripoli, the Hijaz, and Yemen, as those territories were serviced by Eastern lines that went through the non-Ottoman territories of Suakin and

[59] Ibid.

[60] *Posta ve Telgraf Mecmuasi*, August and September 1888

[61] AK ISTKA/2012/BIL/233, No. 10, *Telgraf ve Posta Estatisque,* 1316 (1900)

Malta.[62] As with internal messages, there was also an increase in the financial exchange between the imperial telegraph administration and the company for international messages, a trend that reflects the rising dependency of the Ottoman government on the company.[63]

These financial records reveal in striking terms the simple fact that the Ottoman telegraph administration could not have functioned without the infrastructure and employees of the Eastern Telegraph Company. The company lines were not incidental to the flow of information in the empire but were rather integral to the success of Ottoman telegraphy.

This influence of the private firm also extended into the new legal framework that the Ottoman state created to manage telegraphic infrastructure. This is most visible in the expansion of Ottoman law to protect the extensive network of privately-owned, undersea infrastructure in the empire's waters. Outside of the protection of any single state, submarine cables had become a subject of interest for the International Telegraph Union, particularly after the Eastern Telegraph Company gained representation at the body in 1875.[64] On March 14, 1884, the Ottoman Empire joined twenty-five countries in signing the Convention for the Protection of Submarine Telegraph Cables.[65] The intent of the convention was to form a unified front in criminalizing the breaking or damaging of submarine cables inside and outside of territorial waters. The signatory countries were responsible for writing their own laws regarding the crimes and for forming the

[62] As a result, these messages were subjected to an international tariff. SALT 384/Tel/C/1, Telgraf ve Posta Nezareti Saltanat-I Seniye-I Telgraf Merakizine Mahsus Resmi Rehberdir, August 1905.

[63] Total amount increased from 645,947 piasters to 1,457,607 between 1885 and 1895. See *Posta ve Telgraf Mecmuasi*, August and September 1888; AK ISTKA/2012/BIL/233, *Telgraf ve Posta Estatisque,* 1316 (1900)

[64] Unknown Author, L'Union Télégraphique Internationale (1865-1915) (Berne: Bureau International de l'Union Télégraphique, 1915), 13

[65] The signatories were Great Britain, Argentina, Austria-Hungary, Belgium, Brazil, Colombia, Costa Rica, Denmark, the Dominican Republic, France, Germany, Greece, Guatemala, Italy, Netherlands, Persia, Portugal, Roumania, Russia, Salvador, Servia, Spain, Sweden and Norway, Turkey, the United States and Uruguay. See BOA HR/HMS/ISO/167/13, Convention for the Protection of Submarine Cables, March 14, 1884.

tribunals for prosecuting offenses, but those laws were to be based on the convention's general framework. The convention did not seek to replace the possibility of civil action in case of willful or neglectful damage of cables, but rather to supplement such action with criminalization.

On September 21, 1886, the Ottoman government passed legislation that met the standards of the convention: the new law both criminalized the damaging of submarine cables in Ottoman waters and prescribed punishment for Ottoman mariners who damaged lines in extra-territorial waters.[66] In line with the international agreement, the Ottoman law included a list of newly illegal behavior, which included not only willful damage of cables but also negligent activities that endangered cables. Each crime included a prescription of punishment, ranging from fines to prison time. For damage of property within Ottoman territorial waters, both Ottoman and foreign boats were subject to prosecution, and the local Ottoman authorities were to be responsible for conducting the investigation and judicial proceedings. For damage of property in extra-territorial waters by Ottoman mariners, the prosecution could be held in either the district where the boat was constructed or the district in which the boat's primary port was located.[67] In most cases, it was the captain of the vessel who would be held responsible.

The law designated three tiers of crimes, each of which had its own range of punishment. One class of crimes related to negligence, including not maintaining a certain distance from the cables (which were to be marked with buoys), not using proper signaling when repairing cables, and approaching boats engaged in cable repair. For these acts, an individual could be fined from three to fifty medjides.[68] A second class of crimes included anchoring within a quarter mile of

[66] "Turkey: Loi du 9/21. Dispositions speciales aux eux non territoriales." In *Journal Télégraphique ,* No. 4, April 1887, ITU Archive

[67] "Loi pour la repression des infractions a la convention international du 14 Mars 1884, relatives a la protection des cables sous-marins." Published in *Bulletin Telegraphique et Postal* 1, June 1888, 16.

[68] Ibid.

the lines and throwing nets and other fishing equipment near the protected infrastructure. For these crimes, guilty individuals would also be fined from three to fifty medjides and faced imprisonment for up to five days. The law also clarified that these acts were illegal and punishable regardless of whether a cable was damaged.[69]

The third class of crimes applied to instances when individuals caused the breaking of lines. Captains and individuals guilty of this crime through negligence could be fined from three to fifty medjides and imprisoned from six days to two months. This punishment also applied to individuals who willingly produced equipment that could cut cables. In addition, individuals who willingly cut or damaged cables could be punished with a fine of between fifty and two-hundred medjides and imprisonment from three months to three years. After listing out these penalties, the law clarified that they did not apply to those who were forced to cut a cable in order to save a life or to protect a ship from damage.[70]

By agreeing to protect this private infrastructure with the force of its own laws and criminal justice system, the Ottoman state was effectively assimilating its legal code with the new structure of international law, which could better deal with the issue of transnational property. This assimilation also represented a new iteration of the centuries-old question of how to deal with a *hostis humani generis*. Carrying the meaning of "enemy of humankind" or "one at war with the whole world," the term refers to individuals who engage in criminal activity outside the jurisdiction of any state and thus render themselves subject to arrest and punishment by all states.[71] Traditionally the reserve of piracy, this category of criminality took on new salience

[69] Ibid.

[70] Ibid.

[71] Jody Greene, "Hostis Humani Generis," *Critical Inquiry* 34, no. 4 (Summer 2008): 683-705, 691

with the emergence of privately-owned and publically-used infrastructure in extra-territorial waters.[72]

In part, the Ottoman decision to create a uniform legal space for telegraphy is reminiscent of David Harvey's description of capitalist imperialism. In contrast to territorial imperialism, which Harvey uses to describe the expansion of a single state's power over a new area, capitalist imperialism refers to the diffusion of a particular model through consensus and emulation among world powers in order to promote the seamless flow of capital and commerce.[73] However, in this case, it was not merely the flow of capital and commerce that the new submarine-cable law protected. Given that the Ottoman state also benefited from these company cables, it was in the government's interest to create an environment that was hospitable to the establishment and operation of privately-owned infrastructure. In other words, the legal protection of private submarine cables was not a subordination of state interests to those of the company. Rather, these legal measures represent a momentary alignment of the interests of the Ottoman state and the Eastern Telegraph Company, which had become an integral part of Ottoman imperial communications.

Rivalry

The influence of the Eastern Telegraph Company extended beyond the collaboration practiced between the firm and the Ottoman government. This was because the Ottoman telegraph administration was not just a client of the company: it was also a competitor. While the Ottoman telegraph administration had been the world's first provider of Indo-European telegraphy, it soon

[72] For more on the relationship between international law and submarine cables, see Winseck and Pike, *Communication and Empire,* 48

[73] David Harvey, *The New Imperialism.* New York: Oxford University Press, 2003

faced competition from new entrants in the market, including the Eastern Telegraph Company. In 1873, the company completed a submarine connection from Europe to India, and that route quickly emerged as a competitor to the Ottoman terrestrial lines.

This competition increased with the cartelization of non-Ottoman, Indo-European routes in the late 1870s. In 1878, the Eastern Telegraph Company partnered with the Indo-European Telegraph Company (a Siemens venture) and the Indo-European Telegraph Department (a branch of the British-Indian government that operated the lines connecting India to the Ottoman station of Fao) to create a "common purse agreement," by which the three entities agreed to pool revenue for messages originating in or destined to India.[74] The agreement also brought with it a commitment to setting prices together, as well as rights to divert messages to partner lines in case of interruption. This cartelization applied significant pressure to the Ottoman telegraph administration: its share of Indo-European messages dropped from 18 percent in 1871-72 to a mere 1.5 percent in 1887-1888.[75]

This loss of income was enormous for the Ottoman administration. Telegraphy had proven to be good business for the Ottoman state, particularly at a time of great financial distress for the empire. In 1875, the Ottoman state had declared bankruptcy and in 1881 the Ottoman Public Debt Administration was created in order to guarantee loan repayment to foreign investors. While the Ottoman Public Debt Administration had earmarked certain profitable sectors—such as salt and tobacco—for the exclusive repayment of foreign debt, income generated from telegraphy remained open for general use by the Ottoman state.[76]

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[74] POR DOC/ETC/1/96, India Joint Purse Agreement, May 28, 1878.

[75] Winseck and Pike, *Communication and Empire,* 97,

[76] Birdal, *The Political Economy of Ottoman Public Debt,* 104

While there are no comprehensive figures on the income generated by telegraphy, the few available data points indicate that telegraphy was a source of revenue for the Ottoman state. In the 1882-1883 imperial budget, the income generated by the telegraph network was recorded as six times higher than that of the imperial mines.[77] Furthermore, the relatively low cost of telegraphic operations meant that telegraphy often generated a profit for the government. In 1884-1885, the Ottoman telegraph administration spent approximately thirty-one million piasters on its telegraph network, including on salaries, building and maintaining infrastructure, subsidies for company lines, and payments to other networks for handling Ottoman messages. In contrast, the administration brought in forty-eight million piasters in revenue, making a profit of seventeen million piasters.[78] While this represented just a fraction of the imperial treasury's revenue, it nonetheless made telegraphy a valuable source of available income for the indebted Ottoman state.[79]

The importance of this income to the state can be seen in the measures taken by the Ottoman telegraph administration to remain competitive among providers of international telegraphy, even as alternative Indo-European routes emerged. For instance, the imperial telegraph administration included reciprocity clauses in contracts for submarine cables in the empire, requiring that companies contracting with the Ottoman state use Ottoman terrestrial lines for any traffic to India.[80] When possible, the Ottoman administration also partnered with

[77] Darina Martykánová, *Reconstructing Ottoman Engineers: Archeology of a Profession* (Pisa: Plus-Pisa University Press, 2010), 43

[78] *Posta ve Telgraf Mecmuasi*, August and September 1888

[79] For the financial year of 1880-81, the total revenue for the Ottoman state was estimated to be 1,615,584,000. See Stanford J. Shaw, "The Nineteenth-Century Ottoman Tax Reforms and Revenue System," *International Journal of Middle East Studies* 6, no. 4 (Oct. 1975): 421-459

[80] POR DOC/1/84, Archipelago Concession, November 28, 1870, Article XXIV.

companies competing with the Eastern Telegraph Company in order to maximize its own profit. In 1905, the Ottoman telegraph administration renewed its agreement with the Black Sea Telegraph Company to operate an Istanbul-Odessa line that connected the empire with northern and western Europe. This line, while in excellent condition, had been losing traffic to a Mediterranean route offered by the Eastern Telegraph Company due to the high tariff rates demanded by the Ottoman administration. In order to stimulate traffic and maximize revenue, the administration lowered the tariff rate on the Black Sea line from 30 centimes to 20 centimes for messages going into the empire, while maintaining the higher rate for messages leaving the empire. It was estimated that this adjustment yielded an additional 58,000 francs per year for the imperial administration.[81]

Ottoman statesmen outside of the telegraph administration were also aware of the competition that existed between the underwater cables and the state network. In speaking before the Ottoman House of Deputies in April 1911 on the state of the empire's communication network, Prime Minister Ibrahim Hakki Pasha warned that the privately owned submarine cables "partially compete with our land cables" and emphasized the importance of the state maintaining a monopoly on wired communication, as a means to not lose the valuable income that it represented.[82]

Remarkably, while the Ottoman telegraph administration had been reduced to a small player in the larger game of international telegraphy, it nonetheless continued to weigh on the mind of the Eastern Telegraph Company. In a 1907 exchange between the divisional manager at

[81] POR BSTC/7/1, Assimilation of Tariff between Turkey and Great Britain, via Odessa, July 12, 1905.

[82] Sadrazam Ibrahim Hakki Pasa, speech before the House of Deputies, April 1911. Reprinted in full in Tanju Demir, *Turkiye'de Posta Telgraf ve Telefon Teskilatinin Tarihsel Gelisimi (1840-1920),* 69-72

Athens, James Anderson, and the company representative to the Ottoman government, V. Hekimian, the two men expressed concern over a proposed agreement between the Ottoman and Egyptian telegraph administrations to reduce rates. The reduction threatened to divert traffic bound for South Asia away from the company's submarine cables toward the Ottoman land lines. Fearing that the rate adjustment would lead to a considerable loss for the company, Anderson suggested offering a "compensation" to an Ottoman official who could ensure that the proposal was withdrawn.[83] While such a move risked alerting the Ottomans to the importance the company attached to the matter, Anderson concluded that the protection of the market was ultimately worth it. He suggested that the company target someone outside of the telegraph administration, as that body had already decided it was in the government's best interest to lower rates.[84]

While it is unknown whether the company was successful in this attempt to influence Ottoman pricing, this exchange reveals two related points. First, it demonstrates that the Ottoman telegraph administration had emerged as not only a provider of a public utility but also as an actor in the business of international telegraphy. The physical location of the empire between Europe and Asia situated the imperial network to act as a natural bridge for intercontinental messaging, effectively pitting it against the Eastern Telegraph Company and others engaged in Indo-European telegraphy. Second, this exchange demonstrates the risk of this position. By taking a slice of the Indo-European telegraph market, no matter how small, the Ottoman imperial administration drew the attention of a powerful corporation that sought to dominate the market. As a result, the imperial administration was vulnerable to the threat of manipulation and

[83] POR DOC/ETC/7/52, Letter from James Anderson, Athens Divisional Manager of Eastern Telegraph Company, to V. Hekimian, Eastern Telegraph Company Representative to Sublime Porte, July 3, 1907.

[84] Ibid.

interference by the company, which sought to bribe Ottoman officials to put corporate interests over those of the telegraph administration. Thus, while the company was central to the success of Ottoman telegraphy, its dual role as collaborator and competitor made the Eastern Telegraph Company a risky partner for the Ottoman government.

Conclusion

Unlike its European counterparts, the Ottoman telegraph administration was compelled to work closely with submarine cable companies that originated beyond its borders. As a result, foreign companies, primarily the Eastern Telegraph Company, came to play a critical role in the history of telegraphy in the empire, helping the administration to integrate the empire's disparate parts and to connect it to the global network. In contrast to assumptions about the nature of foreign companies in the modern empire, these privately-owned cables were not isolated outposts of foreign technology; rather they were deeply embedded in the local environment and even, at times, managed by local operators. Nor were they exclusively sites for foreign domination: the Ottoman telegraph administration regulated company behavior and shaped company practice.

Nonetheless, the presence of this company complicated the otherwise state-run project of telegraphy in the empire. Ottoman imperial employees had to be familiar with company practices and pricing; Ottoman law changed in order to accommodate and protect the private infrastructure; and the Ottoman telegraph administration lost market share—and potentially employee loyalty—to the spending power of the large company. These private cables enabled the Ottoman state to communicate with its territories, regardless of their remote locations, but they also tightened the connections between the empire and the expanding zone of British technical and economic practices.

In a way, the partnership between the Ottoman state and the Eastern Telegraph Company demonstrates the symbiotic relationship between the tightening of transnational ties and the centralization of Ottoman imperial power. Reframing the history of submarine cable companies in the empire as a story of mutual influence across a tension-filled network allows for this seeming contradiction and provides a more accurate picture of Ottoman economic and political peripheralization in the nineteenth century. Even as the Ottoman telegraph administration asserted its territorial sovereignty against British state actors, which sought to influence the management of Ottoman terrestrial lines, it came to rely on and engage with a British firm to develop a comprehensive communication system. By focusing on these submarine cables and their attendant social practices, the Ottoman state appears neither as an independent agent nor a subordinate vassal in the globalizing world of the late nineteenth century. Instead, the imperial state emerges as an actor in a transnational network that linked the social and technical, the public and private, as well as the foreign and domestic.

CHAPTER FOUR
Ottoman Telegraphy and New Conceptions of Space and Time

Air, electricity, light, steam, and magnetism
The elements of movement are now in man's possession.

The electric telegraph moves news to the four corners of the earth…
Would this age of ages not boast that inventors have shortened the distances of space and time?[1]

-Sadullah Pasha, *The Nineteenth Century,* 1885

For Sadullah Pasha, an Ottoman-Turkish statesman and literary figure of the late nineteenth century, the electrical telegraph was more than a mere tool of communication. In his poem praising the industrial marvels and scientific breakthroughs of the age, Sadulluh credited the telegraph with defying previous understandings of the physical world and establishing a new set of parameters for how humans could engage with their surroundings. By capturing the power of electricity and magnetism, the telegraph seemed to smash the temporal and spatial limits of both the material world and the imagination, redefining what was possible and what was expected.

For those familiar with the history of the telegraph in American society, Sadullah's words might evoke a phrase used by the Baltimore Sun to describe the disorienting effects of the technology. Reporting on Samuel Morse's 1844 demonstration of his invention, in which a telegram was sent from Washington, DC to Baltimore, the newspaper declared: "Time and Space has been completely annihilated."[2] As suggested by the similarities between these two descriptions, there was something almost universal about the perceived ability of telegraphic

[1] Sadullah Pasa, "Ondokuzuncu Asir," Mecmua-a Ebuzziya no. 46 (15 Cemaziyelevvel 1302/April 1, 1885): 1453-55, My translation

[2] The Baltimore Sun, May 31, 1844.

communication to redefine spatial arrangements and temporal understandings. Whether witnessing the telegraph in Baltimore or Istanbul, observers shared the sense that the technology did more than simply send information. Even as the technology's infrastructure engendered the practice and discourse of territorial sovereignty, its unprecedented speed seemed to alter temporal and spatial frontiers and usher in an era defined by acceleration, mechanical movement, and expanding possibilities in a shrinking world.

Scholars of technology and culture in the American and western European contexts have argued that telegraphy played a formative role in forging a new temporal and spatial culture in the nineteenth century. With the telegraph, time and space ceased to be steady quantities; instead, they appeared to shrink in relation to advances in science and technology. The presence of the telegraph in Ottoman society raises the question of how the same technology affected temporal and spatial concepts within a different cultural space. Yet, as is the case with most industrial technologies, Ottoman historiography offers little analysis of the cultural aspects of telegraphy, despite the extensive presence of telegraphic infrastructure and operations in the empire.[3]

This chapter examines the role of telegraphy in the emergence of new spatial and temporal conceptions in late Ottoman society. It has two aims. First, by examining how Ottoman authors and artists engaged with the technology, it reveals how embedded the technology was in Ottoman society. As telegraphic infrastructure laced the cities and countryside of the empire, it came to alter not only the physical but also the imaginative landscape of Ottoman lands. To

[3] The existing literature on the Ottoman cultural response to telegraphy is limited both in its scope and depth, seeking primarily to assess whether or not Ottoman society was hostile or welcoming of the technology. See Yakup Bektas, "The Sultan's Messenger: Cultural Constructions of Ottoman Telegraphy, 1847-1880," *Technology & Culture* 41, no. 4 (Oct. 2000): 669-696; and Rudolph Peters, "Religious Attitudes Towards Modernization in the Ottoman Empire: A Nineteenth Century Pious Text on Steamships, Factories and Telegraphy," Die Welt des Islams 26 (1986): 75-105. An exception to this is Palmira Brummett's short analysis of representations of the telegraph during the 1908 Revolution. See Palmira Brummett, *Image and Imperialism in the Ottoman Revolutionary Press, 1908-1911* (Albany: SUNY Press, 2000)

borrow a phrase from Stephen Kern, the wired technology was a part of the "essential foundation of experience"[4] for Ottomans, acting not only as a communications tool, but also as an instrument for thinking about the world.[5]

Second, this chapter argues that telegraphy contributed to a sense in the empire that time and space were unstable elements, continuously shifting despite efforts to quantify, regulate, and standardize these concepts. While at first glance this appears to suggest that the telegraph engendered a universal response across cultures, close analysis reveals how Ottoman reactions were shaped not only by the technology but also by the social, cultural, and political changes that took place in the empire during the second half of the nineteenth century. By connecting visual and literary representations of the telegraph with these transformations, this chapter analyzes how popular interpretations of the technology intersected with larger concerns over the changing spatial and temporal borders of the empire.

In particular, the Ottoman reaction to telegraphy was mediated by contemporary concerns regarding four issues, all of which dealt with shifting notions of space and time. First, Ottoman representations of the telegraph connected the technology to the spread of new forms of knowledge in the empire. For pro-Western reformers, such as Sadullah Pasha, the telegraph's ability to disseminate information made it a symbol of enlightenment: an instrument that advanced knowledge over ignorance and expanded the frontier of the possible. However, while this framing of the telegraph as a vanguard of progress initially seems optimistic, closer inspection and consideration of the author's imperial context reveals how this perspective also

[4] Stephen Kern, *The Culture of Time and Space*: 1880-1918 (Cambridge: Harvard University, Press, 2000), 5

[5] This concept was first articulated by the communications scholar James Carey. See James Carey, *Communication as Culture: Essays on Media and Society* (Boston: Unwin Hyman, 1989), 204. Also referenced in Laura Otis, *Networking: Communicating with Bodies and Machines in the Nineteenth Century* (Ann Arbor: University of Michigan Press, 2001), 2

reflects an Ottoman anxiety about territorial conquest and loss. For a world that was increasingly divided into the civilized and expanding, and the benighted and contracting, Ottoman telegraphy held the promise that the empire would be on the favored side of the advancing boundary of modern civilization.

Second, Ottoman representations of the telegraph connected the technology to the expansion of imperial power throughout Ottoman domains. The Ottoman telegraph network was a state-run project, and the technology became a symbol for the elongated reach of central authority into the hinterland. When engaging with the technology, sources as varied as a state yearbook and a Syriac-Orthodox gospel book used language that emphasized how the telegraph "extended" the reach of the imperial authorities throughout the empire, reflecting an interpretation of the modern Ottoman state as being both expansive and saturating geographic space.

Third, for many Ottomans, the telegraph became a symbol of both the benefits and threats of urban connectivity, as the technology seemed to contract space by overcoming the barrier of distance. As telegraph wires emerged throughout the empire, they brought Ottoman society new possibilities for connecting with those who were not physically proximate. Ottoman newspapers included "telegraph sections" that provided fragments of news from foreign lands, such as the Philippines and the United States, granting distant occurrences a degree of local salience that had previously been inconceivable. In an Ottoman Turkish folk song, a lover separated from his beloved gazes at telegraph lines and yearns to use them as a means to reunite with his lost love.[6] For others, these new connections created by the wires were less welcome. In his dystopic novel

[6] Like all Turkish folk songs, the origin of *Telgrafin Tellerini* is difficult to pinpoint. However, a 1924 Columbia record of the song suggests that the song dates back to at least the late Ottoman period. See Vahan Boyajian, *Telgrafin Tellerini*, Columbia Records, 1924. New York Public Library, LO 7945 [Disc].

about a voyeuristic widow, Ahmet Midhat uses the telegraph's cousin—the telephone—as a plot device in his tale of spying, betrayal, and the invasive properties of wired technology.

Lastly, the telegraph also represented the mechanized and unnatural tempo that was becoming characteristic of modern life in the empire. The superhuman speed and indefatigability of the telegraph inspired an Ottoman Arab poet, Issa Iskandir Ma'luf, to write a tribute to the new technology, which he described as overcoming the natural limits of the human body and the older barriers of weather and distance. For some Ottoman observers, there was something eerie about this preternatural speed and endurance, as it enabled strangers from around the world to transcend the barrier of distance and co-habitat in a shared moment in time. In a remarkable short story based on the true events of the Johnstown Flood of 1889, the Ottoman-Turkish author, Mehmet Ruşdi, highlighted this quality of the technology, describing how telegraphers desperately tried to alert neighboring towns of the coming deluge. For Ruşdi as well as for other Ottoman observers, the technology came to be associated with the modern sense of simultaneity, which was predicated on the notion of an abstract universal timeline on which all of humanity progressed.

Whether dealing directly or indirectly with the electrical telegraph, Ottoman authors and artists engaged with the technology and the communication revolution that it produced. Altogether, these works provide evidence that the telegraph was connected not only to new political and economic practices of the empire, but also to how Ottomans understood the spatial and temporal dimensions of their world.

Telegraphy and Notions of Time and Space

The concepts of time and space are among the most fundamental parts of a society's cultural scaffolding. They are connected to how cultures view the past, present, and future—and in fact, whether such divisions are believed to even exist—and they are intimately tied to notions of community, social hierarchy, and the divine order.[7] Temporal and spatial concepts are also shaped by material processes, and thus subject to change over time and place.[8]

However, it can be difficult to study the concepts of space and time *across* time and space, as these notions are so embedded in a society's episteme. Up until the 1930s, most social scientists assumed their own notions of space and time to be accurate representations of a fixed reality.[9] Specifically, they considered space and time to be abstract and absolute quantities that could be evenly divided and precisely measured. Time was homogenous and empty, represented best by a unidirectional timeline.[10] Space was static, finite, and ultimately subject to man's control through mapping and physical management of land.

These concepts, which were two pillars of Newtonian physics, were based in part on the enlightenment principles of objective truth, man's ability to categorize and quantify the natural

[7] Benedict Anderson argued that the emergence of nationalism would not have been possible without the belief in time as linear, empty, and homogeneous. See Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (London: Verso Press, 1983), 26. In his examination of the pre-modern Ottoman temporal culture, Avner Wishnitzer connects time-keeping practices with broader conceptions of a "divinely sanctioned cosmic order." Avner Wishnitzer, *Reading Clocks, Alla Turca: Time and Society in the Late Ottoman Empire* (Chicago: University of Chicago Press, 2015), 19

[8] David Harvey, *The Condition of Post-Modernity: An Enquiry into the Origins of Cultural Change* (Cambridge: Blackwell, 1989), 204

[9] David Livingstone, *The Geographical Tradition. Episodes in the History a Contested Enterprise* (Oxford: Blackwell, 1992), 4.

[10] This is not to suggest that there were not earlier critiques of Western conceptions of linear time. Most notable was Henri Bergson, whose work critiquing the homogenization and flattening of time resonated with Egyptian critics of colonial time. See On Barak, *On Time* (Berkeley: University of California Press, 2013), 20.

world, and the idea of history as a linear path toward progress.[11] When early sociologists and anthropologists encountered different cultural constructions of time and space, whether through engagements with non-Western societies or in studying the past, they viewed these alternatives as aberrations from the supposedly accurate concepts that undergirded modern Western thought.[12]

While the idea of absolute time and space had roots in the early modern period, it was reinforced by the technological and political transformations of the modern era. Industrial capitalism sharpened the concept of abstract time as work and leisure became increasingly separated and labor became defined more as a time-based rather than task-oriented practice.[13] Similarly, capitalist production also relied on the abstraction of empty space, as it provided the landscape into which the juggernaut of industry could plow forward, transforming untapped domains into new sites of production or consumption.[14] The rise of imperial economies also furthered these concepts, as increasing economic circulation between different cultural spaces contributed to the sense that space was homogenous and consistent regardless of locale. The emergence of standards in commercial, scientific, and governmental practices led to increasing precision in the measurement of distance and time, reinforcing a sense that these concepts were

[11] James E. McClellan III and Harold Dorn, *Science and Technology in World History* (Baltimore: Johns Hopkins Press, 2006), 365

[12] For a critique of the anthropological study of "alternative" times, see Alfred Gell, The Anthropology of Time: Cultural Constructions of Temporal Maps and Images (New York: Berg, 1992); Nancy D. Munn, "The Cultural Anthropology of Time: A Critical Essay," *Annual Review of Anthropology* 21 (1992): 101; Johannes Fabian, *Time and the Other: How Anthropology Makes its Object* (New York: Columbia University Press, 1983)

[13] While subsequent scholarship has challenged Thompson's proposed binary between the traditional "task-oriented" practices and the modern "time-based" practices, his point still stands that the capitalist mode of production depends on time as an absolute and discrete property. See E. P. Thompson, "Time, Work-Discipline, and Industrial Capitalism," *Past & Present* 38 (1967): 56-97

[14] David Harvey, *The Condition of Post-Modernity,* 232

discrete quantities. Precision in measurement took on such status that it came to be imbued with an ethical and moral value, and even became an end to itself.[15] As standards for electrical resistance and rail gauge were followed by standards for time zones and geographic dimensions, the modern world took on an appearance of uniformity, predictability, and measurability.

Telegraphy played a role in both bolstering and breaking these conceptions of time and space. On one hand, projects to expand telegraphy heightened an awareness of space as being fixed and finite. Distance had to be precisely measured in order to afford the proper amount of cable, and telegraphic networks were defined by their geographic boundaries. On the other hand, the speed of the technology challenged the supposed fixedness of geographic space. Through its near instantaneous spread of information, the technology seemed to contract and redefine space, suspending it from its terrestrial foundation and rendering it an abstract concept. Shared space became defined less by physical proximity and more by the ability to communicate. Anthony Giddens describes this as the creation of a "unitary framework of experience" made possible by electrical communication, which transcended physical boundaries and allowed for the "influence of distant happenings on proximate events."[16]

Similarly, telegraphy also reinforced and challenged the concept of absolute time. The success of a telegraph system was measured by its speed, a metric that demanded careful observation of the time taken to send and receive messages.[17] Telegraphy also enabled and necessitated the synchronization of time across great distances, allowing for the eventual

[15] Norton Wise, *The Values of Precision* (Princeton: Princeton University Press, 1994), Introduction

[16] Anthony Giddens, Modernity and Self-Identity: Self and Society in the Late Modern Age (Cambridge: Polity Press, 1991), 91

[17] For more on the telegraph and the culture of punctuality, see Chapter 1

standardization of time-keeping systems across nations and, eventually, the world.[18] As a result, time became less porous and more exacting, irrespective of location. Yet, even as telegraphy seemed to confirm the Newtonian principle of absolute time, it also challenged it.[19] Just as the ability to rapidly send messages across great distances seemed to shrink space, it also seemed to speed up time. The world may have been moving forward on a timeline, but its pace seemed to be increasing.[20]

In the western European and American contexts, enthusiasts and critics of the telegraph noted the sensation of a smaller, faster, and more-connected world, but this carried different meanings for different communities. For Christian missionaries, the telegraph's speed brought about renewed hope that the world could be united under one faith.[21] European and American imperialists saw in the technology new possibilities for expanding political and economic power over untapped territories and resistant populations.[22] For most enthusiasts of the technology, the telegraph represented the triumph of science and industry over nature and barbarity: it signaled

[18] Peter Galison, *Einstein's Clocks*, *Poincare's Maps*: *Empires of Time*. (New York: W.W. Norton, 2003), Chapter 3*;* Vanessa Ogle, *The Global Transformation of Time* (Cambridge: Harvard University Press, 2015), Chapter 3

[19] The new speeds and states of motion engendered by train travel and instantaneous communication introduced new possibilities for thinking about how objects and events existed in relation to one another, rather than as independent phenomenon. As Peter Galison effectively demonstrates, Albert Einstein's groundbreaking theory of relativity—which would ultimately turn the idea of absolute time on its head—came out of his thought experiments regarding the use of telegraphs to synchronize distant clocks and trains to probe the concept of relative motion. See Peter Galison, *Einstein's Clocks, Poincare's Maps*

[20] Kern, *Culture of Time and Space*, Chapter 5

[21] Simone M. Müller, *Wiring the World: The Social and Cultural Creation of Global Telegraph Networks* (New York: Columbia University Press, 2016), 97

[22] This vision is best captured by the infamous cartoon of Cecil Rhodes, whose project to telegraphically connect British Egypt and South Africa was depicted as an enormous colonial figure striding across the continent of Africa See "Colossus of Rhodes" Cartoon by Edward Linley Sambourne, in *Punch Magazine*, December 10, 1892.

man's ability to conquer distance and to tame the mountains and sea that had long hindered rapid communication.[23]

Similarly, Western critics of the telegraph targeted the technology's speed as its most notable, and regrettable, feature. The anxiety induced by the telegraph and the endless march of news it enabled is illustrated by an English poem from *Punch* magazine: "Ah, drat them nasty telegrams that keeps folks all in sitch a flurry. Whenever there's the least to-do, with constant worry, worry, worry! I recollect in my young days when there was no sitch expectation, and news to travel took its time, suspense was bore with resignation."[24]

While they are less studied, similar hopes and anxieties about the fluctuating boundaries of space and time were also present in Ottoman society. By the first decade of the twentieth century, the telegraph had become one of the most powerful symbols of the speed and novelty of modern life in Ottoman society.[25] As with the European and American responses, Ottoman hopes and concerns about the telegraph reflected not only particular aspects of the technology, but also larger social concerns that were unique to the empire. Indeed, many of these social and political anxieties of the nineteenth century had spatial and temporal dimensions. The steady pace of territorial loss to foreign aggression and internal secession movements had led many Ottomans to believe that the empire was in retreat—its former might and expansive size wasting away before its helpless rulers. Similarly, the conception of modernity as the most advanced stage of an absolute timeline was central to the discourse of many Ottoman reformers, who framed the empire as not keeping pace with its European counterparts in the journey of history. "Like the

[23] John Gast "American Progress," 1872 and Adam Weingartner, "American Torchlight Procession Around the World," 1858

[24] "Mrs. Washtub on Telegrams" in *Punch* Magazine, Volume 62, January 6, 1872

[25] Brummett, *Image and Imperialism*, 308

Chinese, we are a nation that has also fallen far behind in the highroad of civilization," lamented a 1903 anonymous writer in *Şura-yi Ummet*, one of the journals of the Young Turk movement.[26] Notably, this discourse was not exclusive to those who opposed Sultan Abdülhamid II. For instance, Husayn al-Jisr, an Arab-Ottoman intellectual, praised the sultan's projects in promoting western science, industry, and education and described these initiatives as a means for the empire to "catch up with our neighbors."[27]

Reforms in the military and bureaucracy had also elevated the concepts of efficiency and punctuality, and the emerging temporal culture in the empire centered on clocks and fixed schedules. In his examination of this changing temporality, Avner Wishnitzer has shown how debates over time-keeping practices were wrapped up in larger conflicts over the empire's identity and the influence of particular classes.[28] Just as those debates were about more than clocks, so too was Ottoman commentary on the telegraph about more than just the technology. Grafted onto every cultural work that engages with science or technology is a larger narrative about a society's past, present, and future, producing what some scholars have described as a sociotechnical imaginary. In the words of Sheila Jasanoff, sociotechnical imaginaries "encode not only visions of what is attainable through science and technology but also of how life ought, or ought not, to be lived."[29] Thus, for Ottoman observers, the telegraph engendered its own set of spatial and temporal possibilities that were connected not only to the technology, but also to the

[26] Nader Sohrabi, *Revolution and Constitutionalism in the Ottoman Empire and Iran* (New York: Cambridge University Press, 2011), 76; Sura-yi Ummet, 29, 28 May 1903/1 Rebiyulevvel 1321, "Cin'den Ibret Alalim," 3-4

[27] Marwa Elshakry, *Reading Darwin in Arabic, 1860-1950.* (Chicago: University of Chicago Press, 2013), 327

[28] Avner Wishnitzer, *Reading Clocks*, Chapter 6

[29] Sheila Jasanoff and Sang-Hyun Kim, *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power (*Chicago: University of Chicago, 2015), 4

broader social and political transformations occurring in the empire. In particular, the Ottoman reaction to telegraphy was mediated by contemporary concerns regarding four issues: the spread of new knowledge, the expansion of imperial power, urban connectivity, and the mechanical and synchronized tempo of modern life.

Spread of New Knowledge

The development of the Ottoman telegraph network coincided with the rise of a new way of thinking and speaking about knowledge in the empire. The state effort to incorporate European practices into its military and bureaucracy had led to the emergence of a new class of Ottoman elites who claimed to have unique access to these organizational and scientific theories. As they rose in the ranks of Ottoman bureaucracy, these self-proclaimed "men of science" propagated a discourse that distinguished between "new" and "old" sciences, with the former representing knowledge systems that originated in industrializing Europe.[30] Believing these new theories and practices to be based on the true nature of things, these elites came to define ignorance as the absence of this new science. For these men, and the state that supported them, it was imperative that Ottoman society constantly work to spread these new forms of knowledge through institutional reform and the application of new technologies.

As an information technology, the telegraph became a potent symbol for those seeking to spread this new form of knowledge in the empire. Writers for popular scientific journals of this period, such as the Turkish *Mecmua-ı al-Fünun* and the Arabic *Al-Muqtataf,* described and

[30] Alper Yalçinkaya, *Learned Patriots*: *Debating Science, State, and Society in the Nineteenth-Century Ottoman Empire* (Chicago: University of Chicago, 2015), 27

extolled the new technology for their curious readers.[31] In one such article, the Ottoman technophile and founder of *Mecmua-ı al-Fünun,* Munif Pasha, reported that the telegraph had even been used by physicians to diagnose and treat distant patients, thereby helping to extend the reach of modern medicine deep into the hinterlands of society.[32] This positioning of the telegraph as a vanguard of modern science is made quite clear by the artistic nameplate of another Ottoman Turkish journal, *Maarif* (Knowledge). In it, the title of the publication is surrounded by a mélange of objects evoking new scientific practices, such as light bulbs, distillation equipment, thermometers, and even frogs and bats prepared for biological examination. In the center of the image, right below the title, sits the telegraph machine and its battery pack, hanging proudly from the title's banner as one of the most important fruits of modern knowledge.[33]

The positioning of the telegraph as an agent of enlightenment is also seen in the work of Sadullah Pasha, the Ottoman-Turkish statesman, reformer, and literary figure whose verses opened this chapter.[34] His poem, "The Nineteenth Century" (*Ondokuzuncu Asir)*, provides a window into the new spatial arrangements that late Ottomans associated with the new technology. Written in 1885, this work describes the coming of an age of reason and enlightenment: a time when new knowledge would emerge through experimentation and empirical evidence. According to Sadullah, scientific discoveries and practices would sweep away the superstitions and myths of old cosmologies, expanding the frontier of knowledge ever

[31] Munif Pasha, "Tarih-i Telgraf" *Mecmua-i Funun* I, No. 11, Zilkade 1279 (1863); "Al-talighraf," *Al-Muqtataf*, No. 1 (1876), cited in Marwa Elshakry, *Reading Darwin in Arabic,* 24.

[32] Davison, "The Advent of the Electric Telegraph," 140

[33] Maarif Dergisi, 5 July 1308, Vol 3, No. 64. Widener Library Collection, Harvard University

[34] Ibid., p. 80

further into the domain of ignorance.[35] In the work, Sadullah derided the old practices of onomancy, astrology, and mythology, and dismissed the philosophy of Plato—once revered as an authority of knowledge—as invalid in light of the revelations and inventions brought by experimentation.[36]

Telegraphy was central to this vision of the future. Captivated by the technology's elemental magic, Sadullah praised its speed, dynamism, and power to act as a conduit of information. In what would become a common association of the day, he paired the powers of electricity and steam and credited them with enabling man to engage in unprecedented acts of movement.

> Air, electricity, light, steam, and magnetism
> The elements of movement are now in man's possession.
>
> The electrical telegraph moves news to the four corners of the earth
> Steam, on water and on the continents, is the helpful guide of transportation.
>
> Would this age of ages not boast
> That inventors have shortened the distances of space and time?[37]

Like other early observers of the telegraph, Sadullah was struck by the technology's apparent ability to conquer distance, and in turn, alter time. Its speed meant that the telegraph could unleash news and information to flow freely across the world, an achievement that proved the advancing nature of the enlightenment project and the progress of mankind. This dispersion of information would enlighten society by producing new knowledge and correcting previous misconceptions.[38]

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[35] Sadullah Pasha, "Ondokuzuncu Asir," Stanzas 1-5

[36] Ibid., Stanzas 13-16.

[37] Ibid., Stanzas 8, 11, 12

[38] Ibid., Stanza 23

For Sadullah, the telegraph's ability to bind the world together and uniformly spread information had another implication. While he acknowledged the Western origin of these new technologies and scientific practices, he did not view them as foreign to Muslim societies or hostile to the tenets of Islam. Like many other reformers of his day, Sadullah believed in the compatibility of Western science and his Muslim faith.[39] Indeed, while he held that modern inventions had revealed older creeds to be false, he declared that they would in turn reveal the core Islamic tenet of *tawhid* (oneness of God) to be a demonstrable truth. In language that echoes a Hegelian faith in history's march toward unity, Sadullah proclaimed:

> The oneness of God has become the basis of the wisdom of the age
> The roots of the principles of belief join together
>
> Eventually, all nations will turn toward the direction of oneness
> When reason proves the existence of oneness.

For Sadullah, the telegraph and other industrial technologies had given man the ability to transcend the age-old limits of distance and time in order to achieve a more perfect understanding of the world, in both its scientific and spiritual dimensions. Just as Samuel Morse had hoped that the telegraph would spread Christianity around the world, Sadullah believed that the technology might unify the world around this universal truth.[40]

There was another dimension to this imagined spatial arrangement. As with other Ottoman men of science, part of Sadullah's commitment to new technology stemmed from his belief that the world was divided into two groups: the enlightened and expanding, and the ignorant and retreating.[41] After all, the metaphor of a relentlessly growing realm of

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[39] Omer Faruk Karatas, *Sadullah Pasa* (Erzurum: Zafer Medya, 2015), 61

[40] Müller, *Wiring the World,* 96

[41] This worldview was central to the emerging discourse of Ottoman imperialism, which held that the Ottoman state, rather than European imperial powers, would act as a civilizing influence over the areas of the empire deemed to be "backward." See Ussama Makdisi, "Ottoman Orientalism," *American Historical Review* 107, no. 3 (June 2002):

enlightenment required a complementary zone of ignorance that was disappearing. Regretfully declaring that the well-spring of knowledge had moved to the West, Sadullah pondered the fate of the great centers of knowledge in the East. He closed his poem with an ominous line: "The time is the time of progress; the world is a world of knowledge. Is it possible for societies to remain eternal, if they remain ignorant?"[42]

For Sadullah, Ottoman society faced a choice: Would it be enlightened and expanding, or ignorant and shrinking? In an age in which the world was divided between the agents and objects of colonial power, telegraphy offered a symbol for both the relentless expansion of technology and knowledge, and the cost of being on the outside of that ever-growing domain.

Expansion of Imperial Power

As a state enterprise, Ottoman telegraphy also became associated with expanding imperial power. While the process of state centralization had begun decades before the advent of the telegraph, the emergence of a coherent electrical system accelerated this process and facilitated a radical re-working of the relationship between the Ottoman imperial center and its peripheries. Telegraphic communication enabled the growth of a standardized system of control throughout the empire, and provided new opportunities for those in the periphery to communicate rapidly with the imperial authorities in Istanbul.[43] The historian and political theorist, Charles Maier, has

768-796; Selim Deringil, *The Well-Protected Domains: Ideology and the Legitimation of Power in the Ottoman Empire 1876-1909* (London: I.B. Tauris, 1998); Michael Christopher Low, "Ottoman Infrastructures of the Saudi Hydro-State: The Technopolitics of Pilgrimage and Potable Water in the Hijaz," in *Comparative Studies in Society and History* 57, no. 4 (2015).

[42] Sadullah, "Ondokuzuncu Asir," Stanza 25, My translation

[43] Eugene Rogan, "Instant Communication: The Impact of the Telegraph in Ottoman Syria," in The Syrian Land: Processes of Integration and Fragmentation, ed. by Thomas Philipp and Birgit Schaebler (Stuttgart: Steiner, 1998), 113-128.

credited the technologies of rail and telegraphy with contributing to the transformation of imperial and national spaces into defined "energy fields," in which state power disseminated throughout a defined territory.[44] For the Ottoman Empire, the absence of a substantial rail system in the empire until the early twentieth century made the telegraph even more critical to the program of centralization and territorialization of sovereignty.

Thus, the telegraph system became a potent symbol of imperial strength and control over space. One example of this is found in a 1907 salname (official yearbook) for the province of Mosul, in which developments in the Ottoman telegraph system were included among the "famous events" of world history.[45] Beginning with the creation of Adam, the list offered an eclectic chronology of religious, political, and technological developments that spanned from the pre-historic period to the beginning of the twentieth century, including Noah's flood, the Battle of Badr, the "discovery" of America, the opening of the Suez Canal, and the Berlin Conference. Ottoman achievements featured prominently in the list, particularly those having to do with imperial power and the physical display of authority, such as the conquering (*fetih)* of new territories, the opening (*kuşad)* of imperial schools and institutions, and the building of mosques, palaces, and infrastructure.

Ottoman telegraphy made two appearances in this list, both of which are curiously late in the timeline. Ignoring the enormous telegraph works of the nineteenth century, the text referenced the building of the Hijaz telegraph line (1900) and concluded with an entry about "extending" the telegraph line to Fao (1905).[46] This last entry is particularly noteworthy. First,

[44] Charles Maier, *Once Beyond Borders*, 190

[45] Musul Vilyaeti Salname Rismidir, 1325 (1907), Ataturk Kitapligi Digital Archive.

[46] Located near Basra on the Persian Gulf, the Fao telegraph station would become one of the most important in the Ottoman network due to its role as a juncture between the Ottoman terrestrial network and the British submarine network.

the date given for the extension of the network to Fao is much later than the actual date when the town on the Persian Gulf became a part of the Ottoman telegraph network (1864). Second, it is also significant that the author used the verb "extend" (*temeddüd)* to describe the establishment of the line at Fao. The combination of this language and the fact that the entry concludes the list portrays the telegraph as part of an extending reach of the Ottoman government: the steady expansion of a technological frontier that culminated with the building of a telegraph station at the far edge of the empire. However, this narrative conflicts with the actual growth of the network, as the Istanbul-Fao line was one of the empire's first. While the history of Ottoman telegraphic development was not one of an expanding frontier, the desire to portray it as such reflects a contemporary view of the telegraph as stretching Ottoman power over the full extent of the empire's territory.

The elevation of the telegraph into a symbol of state power over imperial space is also found in the "telegraph column" built in Damascus in 1902 to celebrate the completion of the Damascus-Medina telegraph line. As part of Sultan Abdulhamid II's project to tighten control over the holy sites in the Hijaz, this telegraph line—and the railroad that would eventually accompany it—seemed to embody the new ability of the modern Ottoman state to expand its reach through technology. Designed by the sultan's chief architect, Raimondo D'Aronco, the enormous monument rose approximately four stories in the air, towering over nearby imperial and municipal buildings, such as Post and Telegraph office, the police headquarters, and a branch of the Ottoman bank.[47] The structure's location in Marja square is fitting, given the late-nineteenth transformation of this city quarter into what Zeynep Çelik has called "the modern

[47] Zeynep Çelik, *Empire, Architecture, and the City: French-Ottoman Encounters, 1830-1914* (Seattle: University of Washington Press, 2008), 140

order, embodied by the state," due to the number of government buildings and sites of public engagement.[48]

There are several aspects to the monument that evoke the telegraphic technology it commemorates. First, the use of a single column, rising tall and straight, calls to mind the thousands of poles that were a critical part of the Ottoman telegraph network. Second, the material composition of the monument—a dark-grey cast iron—evokes the austere, industrial ascetic of the telegraphic infrastructure. Third, and most notably, the length of the column is decorated with telegraph poles and wires in bas-relief, which appear to climb up the monument like ivy on a tree. These wires snake up to the top of the structure, which is crested with a clear symbol of the authority of the Ottoman state: a replica in miniature of the Hamidiye mosque, located at the sultan's residence at Yildiz palace in Istanbul. By connecting Istanbul to Damascus to Medina, this public monument portrays telegraph wires as the ties that bind the wide-spread empire together.

This view of the technology was not restricted to official texts or voices from the imperial authorities; it also emerged from the periphery. A remarkable example comes from a Syriac Orthodox gospel book from the eastern Anatolian town of Idil, in which an illumination vividly and positively portrays the ability of the telegraph to tighten imperial control over space.[49] The Syriac Orthodox community (also known as *Süryani,* Western Syrian church, or Jacobite church) was a minority sect within the Christian population of the empire. Centered in the region between Diyarbakir and Hakkari, the community was administratively subsumed within the

[48] Ibid., 130

[49] An image of this icon can be found in an illustrated volume, created by Hans Hollerweger, which documents his engagement with the Syriac Orthodox communities in Eastern Turkey. The precise date of the illumination's creation is unknown, but likely from the 1860s. See Hans Hollerweger, *Turabdin: Living Cultural Heritage* (Friends of Tur Abdin: Linz, 1999), 274

Uniate Armenian millet and the Greek Orthodox millet for most of the nineteenth century.[50] For this marginalized community on the fringes of the empire, the telegraph's ability to compress space made the technology worthy of a spot among the saints and scripture that typically featured in gospel books.[51]

The illumination depicts the Istanbul-Baghdad telegraph line, which was not far from the site of the monastery. The cities of Istanbul and Baghdad are represented on the left and right edges of the work. While the imperial capital is identifiable by its cross-adorned domes and more ornate design, the two cities are allotted the same, minimal space in the periphery of the illumination. It is the connection between these two cities that is the true focus of the work. Stretching across the canvas, two black cables dangle from five enormous telegraph poles. Thread through sets of white and black porcelain insulators, the cables snake across the poles and burrow deep into the buildings of the pictured cities. Despite being physically separated by thousands of miles, the telegraph effectively renders these two cities neighbors that can be pictured in the same frame.

[50] Adam H. Becker, *Revival and Awakening: American Evangelical Missionaries in Iran and the Origins of Assyrian Nationalism* (Chicago: University of Chicago Press, 2015), 51.

[51] Ibid., 58

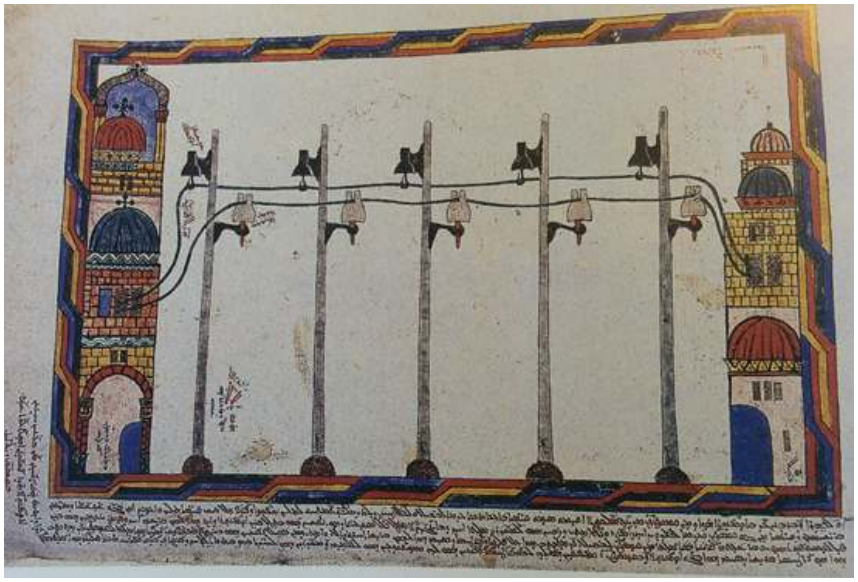

Figure 4.1 Illumination from Syriac Orthodox Church in Idil

The short inscription, written in Syriac, provides further evidence of the artist's reverence for this new technology. Describing the telegraph as a "wonder," the artist marveled at how it had enabled individuals in Istanbul to send messages to "as far as Babylon and to every province of the kingdom."[52] He expressed amazement at the speed and accuracy of the messages, and the ease with which those in the imperial capital could convey their orders and wishes. In anticipation of potential skeptics of the technology, the author declared that he had personally observed this phenomenon and could testify that it was true: "In the same way that lightning flashes and flees, so swift was their exchange. Thus, we have seen this craft with our eyes and it was achieved in our time."[53]

The author's emphasis on witnessing the technology is particularly noteworthy. The fact that the wires could transmit a message faithfully and swiftly was incredible, almost miraculous. Indeed, it is remarkable that this technical scene was included in a religious text that was

[52] Translation by Nicholas Al-Jeloo, shared on June 16, 2016

[53] Ibid.

otherwise reserved for more spiritual matters. Thus, the illumination and the accompanying words suggest a certain continuity between how Ottoman communities interacted with new and old forms of wonder and the power of the unseen. While the electrical telegraph may have been a product of modern science and industry, its ability to defy distance and time made it a miracle of sorts. As with other miracles, the telegraph demanded faith in the invisible, belief in universal truth, and a sense of awe for powers that exceed—and thereby extend—human capabilities.[54]

Overall, the illumination provides a powerful commentary on the new spatial arrangement made possible by the telegraph. The fact that this perspective came from members of a minority Christian group makes it all the more significant. Like other Christians in this area, the Syriac Orthodox community was subjected to violence by Kurdish tribes, who sought to secure greater economic and political control of the region. In the 1840s, a series of massacres against Assyrian Christians by Badr Khan Bey led to imperial intervention and the beginning of the end of the semi-autonomy of Kurdish and Assyrian communities in southeastern Anatolia. [55]

Thus, it is understandable that there were voices from the Syriac Orthodox community that praised the centralizing effects of the telegraph. The wired technology offered the promise of increased protection and the possibility of securing a direct line to the imperial authorities, rather than going through intermediaries.[56] For a vulnerable community on the periphery of the empire,

[54] For more on the similarities between spiritual wonder and scientific amazement, see James Delbourgo, *A Most Amazing Scene of Wonders: Electricity and Enlightenment in Early America* (Cambridge: Harvard University Press, 2006)

[55] In particular, the massacres of Assyrian Christians by Badr Khan Bey prompted a heavy response by the Ottoman army, which secured nominal Ottoman rule in the southeastern provinces of Ottoman Anatolia. Becker, *Revival and Awakening,* 51

[56] There is evidence that indicates the Syriac Orthodox community may have received recognition as its own millet in 1882, but the ad hoc nature of the millet system makes this hard to confirm. Benjamin Trigona-Harany, *The Ottoman Suryani from 1908-1914* (Piscataway: Gorgias Press, 2009), 100

the new spatial framework was something to be celebrated and memorialized among other achievements, whether man-made or divine.

Not all, however, welcomed the new spatial parameters created by the telegraph. For some, the telegraph wires threatened to act as binds, tightening the control of the imperial government at the expense of local autonomy. During the first decades of the network, there were numerous incidents of Kurdish and Arab tribes destroying telegraph lines in the periphery of the empire, acts that were often quite successful in downing imperial communication.[57] Whether such attacks were acts of protest or intentional sabotage, they reflected a contemporary concern that the telegraph expanded the reach of the central government and enabled imperial meddling in local affairs.

Individuals in Istanbul also noted the role of the telegraph in intensifying the power of the state throughout imperial space. In her memoir, *Six Years in Europe*, Ottoman author and member of the political elite, Melek Hanim, detailed the threat posed by the telegraph during her escape from Istanbul. Seeking to flee her abusive husband and take refuge in western Europe, she and her daughter had disguised themselves as anonymous travelers on a ship bound for Piraeus. In describing their harrowing exit, the author recalled how she continued to be gripped by a fear of capture—even after the ship had left the Istanbul docks—because the telegraph had extended the reach of the authorities: "As we descended the 'Great Straights,' every minute drawing more and more beyond danger, further and further from the immediate reach of that terrible, silent, fiery messenger, the telegraph, our spirits rose and our courage grew."[58]

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[57] Soli Shahvar. "Tribes and Telegraphs in Lower Iraq: The Muntafiq and the Baghdad-Basrah Telegraph Line of 1863-65." Middle Eastern Studies 39, no. 1 (2003): 89-116; BOA HR/ID/1675/13, Letter from Director Agaton to Ali Pasha, May 24, 1866.

[58] Melek Hanim, *Six Years in* Europe (London: Chapman and Hall, 1873). Cited in Roderic Davison, "The Advent of the Electric Telegraph," 147

These examples provide contemporary perspectives on how the telegraph enabled the imperial authorities to permeate space in unprecedented ways. While the technology seemed to shrink distance, it did so through expanding the reach of the Ottoman state.

Urban Connectivity

The telegraph's perceived ability to transform space through connecting the proximate with the distant was also closely connected to the larger transformation of Ottoman urban settings. During the second half of the nineteenth century, many Ottoman cities experienced tremendous growth and restructuring as the empire adopted new practices of governance, industrialized, and integrated into the world economy.[59] The telegraph played a central role in increasing connectivity within and between Ottoman cities, as well as between Ottoman lands and the world beyond.

At the broadest level, telegraph wires provided a pathway for Ottomans to know about distant occurrences in real time. Like their counterparts around the world, Ottoman newspapers and periodicals from the late nineteenth century onward included news bulletins from around the world. In newspapers such as the Turkish *Ikdam* and Arabic *Hadiqat al-Akhbar*, there were sections reserved for foreign news that were called "The Telegraph" and "Telegraphic Messages," respectively.[60] Following the spirit of the technology, these sections were often nothing more than bullet points that highlighted political events around the world. For instance, Ottoman readers of the February 28, 1899 issue of *Ikdam* would have skimmed over news

[59] Wishnitzer, *Reading Clocks,* Chapter 5, Jens Hanssen, *Fin de Siecle Beirut*; Murat Gul, *The Emergence of Modern Istanbul: Transformation and Modernization of a City* (London: I.B. Tauris, 2009)

[60] The reference for *Hadiqat al-Akhbar* comes from Marwa Elshakry, *Reading Darwin in Arabic,* 76

regarding the fallout of the Battle of Omdurman in the Sudan, skirmishes between the invading U.S. army and Philippine forces, and the Dreyfus Affair in France.[61]

The incorporation of telegraphic updates into daily newspapers and weekly periodicals reflected and constituted an increasing awareness for the global among Ottoman urbanites. While Ottoman cities and ports had long been connected to the outside world through trade and intellectual networks, the increasing speed and frequency of circulation, made possible by the new technologies of communication and transportation, sharpened the notion that Ottoman subjects were also part of a larger world. From the participation of Ottoman readers and authors in transnational intellectual movements, to the continuation of family and personal ties despite migration and flight, to the increasing circulation of money and funds abroad, the late nineteenth century was marked by increasing international connection for many in the empire. [62]

For some Ottoman observers, telegraph wires promised to act as pathways that could connect and reunite individuals separated by distance. In what might be the most famous cultural reference to telegraphy in the Turkish language, an Ottoman-Turkish folk song from this period used the technology as a metaphor for overcoming the heartache of separation and migration. Like most Turkish folk songs, the song lacks a formal title and its composer and lyricist remain unknown.[63] However, its most common name is "Telegraph Wires," or "Do Birds Sit on Telegraph Wires?" and it is believed to have originated in Istanbul sometime around the turn of

[61] Ikdam, February 28, 1899

[62] Ilham Khouri-Makdisi, *The Eastern Mediterranean and the Making of Global Radicalism, 1860-1914* (Berkeley: University of California Press, 2010); Stacy Fahrenthold "Transnational Modes and Media: The Syrian Press in the Mahjar and Emigrant Activism during World War I," *Mashriq & Mahjar: Journal of Middle East Migration Studies* 1, no. 1 (Spring 2013): 32-57. Servet Yanatma, "The International News Agencies in the Ottoman Empire (1854-1908)," (PhD diss., Middle East Technical University, 2015).

[63] See Vahan Boyajian, *Telgrafin Tellerini*, Columbia Records, 1924. New York Public Library, LO 7945 [Disc].

the century. A Columbia Records recording of the song from 1924, by an Ottoman-Armenian musician who had immigrated to the United States in 1907, suggests that the song dates back to at least the first decade of the century, if not earlier.[64]

The song opens with the singer commenting on how common it is for birds to sit on telegraph wires, a lyric that conveys how the technology had become a part of the lived environment of Ottoman cities. He uses the perceived naturalness of this act as a metaphor for asking whether it is not equally as natural for one to miss his beloved. Using language that hearkens back to the Ottoman literary tradition of Divan poetry, he positions himself as a suffering lover, and his beloved as the coy power-holder who teases him by remaining just out of reach. [65] He describes his loneliness and regret for having left Istanbul for the bustling port of Izmir and how he yearns for his lost love.

Do birds perch on telegraph wires?
Does everyone burn for (his/her) lover like this my dear
Walk up to me, beside me, just near to me
What has befallen my ignorant head in my youth?

What was so wrong with Istanbul that I came here
I had burned the bridges and came here
You burned me with your coquetry

Should (I) stride through the wires of telegraph?
Should (I) shoot the ones who being disloyal their lover by loving somebody else?
Get on the ship, walk up to me, just near to me
What has befallen my ignorant head in my youth?[66]

For the singer, the telegraph wires were not only a natural part of the urban landscape, but they also offered a tempting pathway and connection from the proximate to the distant. Like other

[64] Ibid.

[65] Walter Andrews and Irene Markoff, "Poetry, the Arts and Group Ethos in the Ideology of the Ottoman Empire," *Edebiyat* 1, no. 1 (1987), 34

[66] Lyrics provided by the Armenian and Turkish folk musician, Ara Dinkjian in correspondence in November 2017.

subjects of Divan poetry, the lover is positioned as striving for union with his unreachable beloved. With the lyric, "should I stride through the wires of telegraph?" the song simultaneously paints the telegraph as both a road to reunite separated lovers and one that is frustratingly closed off from physical transportation.

Prevented from physical union with his beloved, the lover must be content with the thin life line that the telegraph offers. In another reference to the traditions of Divan poetry, in which the gaze of the beloved offers both the promise of union as well as the torment of separation, the singer calls: "The telegraph lines look up to the sky—your eyes make so many hearts burn with love."[67] The song's association of the telegraph with the notion of reunion demonstrates how the technology offered new possibilities for thinking about space, distance, and separation in the modern empire. By offering a possible pathway of connection, the telegraph simultaneously shrank the space between the two lovers while making that distance seem larger than ever.

If some Ottoman observers wished that the telegraph could bring even more connection, some bemoaned the tighter, more crowded world that it seemed to engender. As Palmira Brummett has shown in her examination of cartoons and images from the Ottoman press after the 1908 Revolution, telegraph wires were often depicted as ensnaring and overwhelming cities and their inhabitants.[68] This concern was not only about the physical nuisance of the wires, but also the ways in which the communication technologies represented an increasing state of surveillance in the empire. Even before the rule of Sultan Abdülhamid II, whose famed surveillance state was said to include as many as 40,000 spies in Istanbul alone,[69] the Ottoman

[67] Ibid.

[68] Palmira Brummett, *Image and Imperialism*

[69] Nader Sohrabi, *Revolution and Constitutionalism,* 66. For more on the high censorship and security apparatus of the Hamidian regime, see Ipek K. Yosmaoğlu, "Chasing the Printed Word: Press Censorship in the Ottoman Empire,

telegraph network was a site of government monitoring. The mediated nature of telegraphic communication meant that all messages passed through the hands—and ears and eyes—of telegraphers, who were charged with halting messages that contained threats to the political and social order.[70] As a result, the intensive presence of telegraph wires in the city inspired anxiety about how wired technology allowed for breaches of personal privacy.

This anxiety is present in the novel, *Durdane Hanim*, by Ahmet Midhat. One of the first Ottoman authors to experiment with the genre of the novel, Midhat grappled with the positive and negative aspects of modern technology in much of his work. Published in 1881, this story featured a new type of telegraph apparatus that had not yet become established in the Ottoman Empire: the telephone. Known initially as "acoustic telegraphy," telephony substituted voice for electrical signals, but maintained the fundamental telegraphic concept of using a wire as a conduit of information. Thus, while Midhat's novel predated the Ottoman telephone system by a number of decades, his dystopic plot would still have resonated with Ottoman readers concerned about the invasive reach of wired technology.

The story revolves around Ulviye Hanim, a young widow who uses a telephone wire to spy on her neighbor, Durdane Hanim, and ultimately becomes tangled up in the latter's personal tragedy. Ulviye, who spends her days reading novels and yearning for adventure, becomes fixated on the comings and goings of Durdane, who is having a secret love affair. After using a garden ladder to spy on the unsuspecting young woman and her lover, Ulviye hears about a new device called the "telephone" that can transfer sound between distant places. Referring to the

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1876-1913," *The Turkish Studies Association Journal* 27, no. 1/2 (2003): 15-49; and Brummett, *Image and Imperialism,* 3-10;

[70] Ahmet Yuksel, "Sucluluk ve Sucsuzluk Arasina Osmanli Telgraf Memurlari," in Uluslararasi Sosyal Araştimalar Dergisi 7, no. 33 (August 2014), 371

technology as a "miracle," her friend describes its astounding ability to enable individuals to hear "words spoken from the other side of the world."[71] Eager to apply the technology to her surveillance project, Ulviye begs her friend to procure one. He obliges, and together they test the machine, placing one end of the wire in the garden and the other end inside the house. Upon being able to hear her maid's whispers through the wire, Ulviye declares her amazement:

> "O Durdane! Now I know that even if you whisper into your lover's ear, I will be able to hear everything as if you were whispering into my own! How wonderful are countries that apply this technology! Truly anything is possible with technology."[72]

That night, she returns to Durdane's window, embeds the wire into the plaster, and laces it back down through the garden and into her room. She is then able to clearly hear her subjects' conversations, and she learns her neighbor's dark secret: the young woman is pregnant, and her lover has refused to marry her. At this moment, Ulviye's curiosity transforms into a desire to avenge this hapless woman, and she decides to join the drama that she had previously only been observing.[73]

After anonymously assisting the young woman with her childbirth, Ulviye then calls upon her and demands that the father of the child be punished. Durdane reluctantly agrees, but begs Ulviye to bring him to her one last time before taking any action. In the end, Durdane confronts her lover and dramatically kills herself in order to punish him. This tragic ending comes as a surprise, particularly given the heroine's initial optimism about the effects of technology. Originally described as a miracle, the wired technology allowed for unprecedented access into a stranger's life. It pulled away the curtain of privacy, allowing the truth to be

[71] Ahmet Midhat, *Durdane Hanim* (Istanbul: Vakit Gazete Matbaa Kutuphane, 1951), 81

[72] Ibid., 82

[73] Ibid., 93

revealed. But to what end? Ulviye's intervention, driven first by curiosity and then by moral outrage, ultimately led to the death of the very person she was seeking to help.

For the audience of Ottoman readers, who would have been familiar with the telegraph but not necessarily the telephone, the association between wired technology and spying would have been well-known. While telegraphy and telephony enabled individuals to make connections across distance, it also exposed those who used the technology to breaches of confidentiality and invasion of private, personal spheres. For Midhat's heroine, the electrical wires offered a way to unlock the secrets of a stranger's life, but they also swiftly entangled her in a plot that she had intended to observe from afar.

A Mechanical and Synchronized Tempo

In addition to creating a sense that the world was smaller and more interconnected, the telegraph also promoted the notion that Ottoman modernity would have a tempo that was quicker and more constant than ever before. In part, this was due to what Wishnitzer describes as the new "clock-based temporal order" that was manifested by the time-oriented practices of telegraphy, railroads, and ferries in the empire.[74] It was impossible to interact with these technologies without being keenly aware of time, whether through the timetables of trains and ferries, the timestamps of telegraphy, the frustration of delay, or the anxiety of being late. But there was an additional aspect to this new tempo. The mechanized nature of the telegraph enabled individuals to overcome not only tremendous distance, but also the physical limitations of animal and human bodies. In contrast to its human benefactors, the machine had no need to rest, eat, or seek shelter from the natural elements. It seemed to listen and speak, and to move and run, without the

[74] Wishnitzer, *Reading Clocks*, Chapter 5

baggage of a corporeal body. With its unnatural endurance, the technology offered new possibilities for overcoming the spatial and temporal challenges of communication.

This fascination with the mechanized nature of the telegraph is captured by an imaginative Ottoman-Arabic poem on the technology. Entitled "The Telegraph," this poem was written by the Lebanese poet Issa Iskandir Ma'luf and published in both the popular Arabic journal, *al-Muqtabas,* and in Jamal al-Din al-Qasimi's 1911 treatise promoting the use of the telegraph in religious exchanges.[75] In this short but colorful piece, Ma'luf anthropomorphized the telegraph in order to emphasize the technology's incredible abilities.

> It flies over the earth and sea, running just as lightening flies in the sky.
> Revealed by a symbol that comes down the line, read in full clarity in the farthest cities.
>
> The deaf hears local sayings, the mute speaks of distant longings
> An inanimate, hand-less writer, articulates letters of the alphabet.[76]

For the author, the telegraph's human-like yet superhuman abilities enabled the technology to extend man's capabilities. Ignoring the real challenges posed by weather and terrain to telegraphic infrastructure, the author presented the technology as elevating human communication above the constraints of the natural world.

> It doesn't fear heat or cold, for it runs in the summer and in the winter
> And it withstands the pressure of tornados, and the waves of water
> It runs in the light and in darkness, to deliver what it wants without ever weakening[77]

[75] Issa Iskandir Ma'luf, "Al-Telgraf*,"* in *Al Muqtabas,* Vol. 5, Issue 6, 1910-1911, My translation. The poem is also printed anonymously in Jamal al-Qasimi, *Irshad al-Khalk ila al-aml bi-khaber al-barq.* Al-Muktabus Press, 1329, 80. My thanks to Vanessa Ogle, whose reference to the anonymous version of the poem helped me to discover the original work. See Vanessa Ogle, *The Global Transformation of Time,* 253.

[76] Ma'luf, "Al-Telgraf," My translation

[77] Ibid.

The telegraph's indifference to the elements and indefatigability offered a new standard for how to think about the passage of time and movement through space. By divorcing communication from transportation, the technology promised to free Ottoman society from the control of the weather and seasons, which had previously determined the flow of information. With its speed and endurance, the technology enabled man to reach beyond his corporeal limitations and reveal the world's secrets.[78] Thus, as in the American and western European contexts, the speed and mechanical nature of the telegraph seemed to open up an era of unrestrained possibilities.

One of these new possibilities that the telegraph seemed to release was the ability to temporally connect individuals who were spatially separated. Through the transmission of an electrical signal across hundreds of miles, two telegraphers were able to occupy the same intellectual space while remaining physically separated. In this way, the technology enabled the modern concept of simultaneity, the idea of co-existing with distant strangers on the same notch of an abstract timeline.[79]

This concept of simultaneity was particularly relevant to Ottoman telegraphy because of the imperial administration's extensive use of the Hughes telegraph device, which required the mechanical synchronization of both the sending and receiving machines.[80] Unlike the Morse instrument, in which letters were represented by a code of audio-electrical pulses (known as Morse code) the Hughes machine included an actual keyboard, allowing for the sender to strike individual, lettered keys. The receiving machine knew which letter was sent thanks to a brilliant system of coordination: the two machines each had a spinning wheel, similar to that in a music

[78] Ibid.

[79] Walter Benjamin, *Illuminations*. (London: Fontana, 1973), 265. Referenced in Anderson, *Imagined Communities,* 24-26

[80] *Posta ve Telgraf Mecmuasi*, August and September 1888

box, and each letter of the alphabet corresponded to a particular time interval of the rotation.[81] As a result, the Hughes machines required absolute coordination and synchronization between two machines across great distance, a feat that was only possible through the sending of an electrical pulse.

This mechanical synchronization was followed by an intellectual synchronization, as individuals were able to mentally transcend the limits of space through the shared knowledge and information provided by the technology. By erasing or minimizing the delay in between the occurrence of an event and news about it, the telegraph engendered both hope and anxiety in Ottoman society. This was particularly true during times of emergency. Fire towers in Ottoman urban spaces, such as Galata Tower in Istanbul, were equipped with telegraphic machinery in order to expedite communication regarding fires in the city, which were a constant threat to inhabitants.[82] Reporting on the great Istanbul earthquake of 1894, the news and literary journal, *Hizmet*, described how telegraph workers had relocated the precious machines to the garden in order to prevent them from being harmed. While the rest of the building suffered damage from the tremors, the quick action of the operators helped to preserve the technology, thereby making it available for use during the crisis.[83]

This ability to know simultaneously about an unfolding catastrophe without being physically present was one of the most dramatic effects of the telegraph. For example, Stephen Kern and others have examined the role of wireless telegraphy in creating a sense of shared

[81] N. Kathrerine Hayles, *How We Think: Digital Media and Contemporary Technogenesis*. (Chicago: University of Chicago Press), 145

[82] Servet-i Funun, Issue 1, 1307 (1890), 31

[83] Tanju Demir, *Turkiye'de Posta Telgraf ve Telefon Teskilatinin Tarihsel Gelisimi* (1840-1920). Ankara: PTT Genel Mudurlugu, 2005, 43

experience among distant parties during the *Titanic* disaster, as the technology allowed individuals to witness the tragedy without actually seeing it.[84] Whether on nearby vessels or on shore, those who heard the distress messages of the foundering ship were unified in the moment, even as they occupied different spaces. Similarly, scholars have also identified the role of the telegraph in enabling war journalism and in granting new urgency and intimacy to foreign events.[85]

Fascination with telegraphic simultaneity was also present in Ottoman society. In a short story based on actual events, Ottoman author Mehmed Rüşdi crafted a fictionalized account of the tragic Johnstown flood of 1889, which killed over 2,200 people in a mining community in Pennsylvania.[86] The Ottoman story was published one year after the horrific flood, which was one of the first disasters to garner real-time attention both across the United States and around the world. Sensationalist coverage of the flood produced chilling tales of brave telegraphers who held on to their posts at their peril in order to give updates on the rising water. Of all the stories from the flood, that of Western Union employee Hettie Ogle gained the most prominence. It was said that as the waters rose around her, she sent as many telegrams as possible to towns farther downstream, warning them of the impending deluge. Ogle was ultimately swept away by the torrent, but not before sending a final telegram that broadcasted her own demise.[87]

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[84] Kern, *The Culture of Time and Space,* 67; Tim Bergelder and Sarah Street, *The Titanic in Myth and Memory: Representations in Literary and Visual Culture* (New York: I.B. Tauris, 2004)

[85] Barak, *On Time,* 128; Craig Carey, "Breaking the News: Telegraphy and Yellow Journalism in the Spanish American War," *American Periodicals: A Journal of History and Criticism* 26, no. 2 (2016) 130-148.

[86] Mehmed Ruşdi, *Amerika Feyezana* (Istanbul: Kasbar Matbasi, 1307[1890]). Transliterated by Gunil Ozlem, 2015

[87] Willis Fletcher Johnson, *History of the Johnstown Flood* (Boston: James H. Earle Press, 1889), 100. For a classic history on the flood and its aftermath, see David McCullough, *The Johnstown Flood* (New York: Simon and Schuster, 1987)

In his depiction of the flood, Mehmed Rüşdi emphasized the haunting sense of simultaneity that telegraphy enabled. Written in a journalistic style, the story begins with encyclopedic details of the geography, population, and industry of Johnstown. The narrator describes a beautiful, man-made reservoir that perches above the city, a place where children learn to swim and young lovers escape prying eyes. Foreshadowing the coming disaster, he describes the poor condition of the dam that props up this enormous body of water, a structure that had been neglected by a greedy industrial company. He ominously states that lakes, while idyllic, could also be dangerous. Evoking the biblical flood, the narrator declares that the modern world, just like the old, could be subject to the destructive power of water.

> If a flood suddenly overruns a city, it is extremely difficult to escape it…In the blink of an eye, enormous houses and factories are destroyed; in the smallest time, great cities with industrial centers, businesses, exemplars of prosperity, and flourishing civilization, come to resemble savage ruins.[88]

When the flood strikes in Rüşdi's tale, its sheer force interrupts the storyline and washes away all of the protagonists. Inspired by the accounts of the courageous Johnstown telegraphers, Rüşdi emphasized how the speed of the telegraph was no match for the swiftness of the destructive waters. The narrator describes the desperation of the telegraph operators as they frantically sent out emergency messages:

> Two telegraphs, sent to Pittsburgh from Johnstown during the tumult of the disaster, cannot even give an idea of the speed of this calamity. The first telegram, sent May 31 at 12:50pm read: 'It is reported that Fork Dam has broken, we can hear water. The city is in danger. The second telegraph, sent at 12:53pm read 'The water is rising quickly. There is 3 feet of water on the ground floor, and it is still rising. We thin----.' The end of the telegraph never came. The sentence was cut in half. The telegraph officials, along with their station, were swept away.

[88] Rüşdi, *Amerika Feyezana*,7, My translation

The operators' final words, cut off in mid-sentence, convey the horror of the moment in real time. While the receivers could not view the events with their eyes, they could still witness the destruction and death of their fellow telegraphers through the abrupt silence of the line. The telegraph may have enabled its users to transcend older limits of knowledge, but it could be a gift of helpless omniscience.

Rüşdi's use of the technology to emphasize the drama of the flood reflects the telegraph's strong pull within the modern Ottoman imagination. While his readers would have been unfamiliar with Johnstown, Pennsylvania, they were likely quite experienced with the transcendent effects of the telegraph. By enabling individuals to transcend the physical boundaries of place through a shared sense of simultaneity, the telegraph offered Ottomans a new framework for thinking about space and time and the possibilities for forming connections in the modern world.

Conclusion

In these literary and visual engagements with the telegraph, we are able to see how the technology intermingled with existing spatial and temporal concepts and engendered new ones in Ottoman society. By the start of the second half of the nineteenth century, the processes of state centralization, industrialization, and urbanization had already begun to stimulate new ways of thinking about time and space in the empire. The telegraph not only heightened this sense of temporal and spatial instability, but it also offered a powerful metaphor for Ottomans seeking to describe the shifting dimensions of modern life.[89]

[89] In describing how communication technologies have shaped culture, James Carey emphasized the ways in which new technologies give humans new "things to think with." See James Carey, *Communication as Culture: Essays on Media and Society* (Boston: Unwin Hyman, 1989), 204. Also referenced in Laura Otis, *Networking: Communicating with Bodies and Machines in the Nineteenth Century* (Ann Arbor: University of Michigan Press, 2001), 2

While these new temporal and spatial concepts were closely connected to the unique circumstances of the empire, it is significant that they also overlap with some of the cultural responses to the telegraph in Western societies. The fact that both Ottoman and Western observers associated the telegraph with an ability to redefine time and space suggests that these societies may have entered the twentieth century with even more epistemic similarities than previously assumed. While it would be an overstatement to claim that there was a distinct telegraphic culture, it is likely that the similar spatial and temporal notions around the technology constituted and reflected a number of shared assumptions that existed in societies where the technology was present. Undoubtedly, the shared experience of telegraphic communication contributed in some way to the convergence, however incomplete, of Ottoman and Western modernities.

Additionally, the similarities between the Ottoman and Western responses to telegraphy seem all the more significant when considering the experience of British Egypt, where the technology was closely associated with foreign domination.[90] The fact that Ottoman telegraphy was largely a national and indigenous project precluded any significant association between the technology and European imperialism, as well as any sustained attempt to position telegraphy as antithetical to Islam.[91] While there were Ottoman opponents of the technology, their criticism tended to focus more on the vulnerabilities or unintended consequences of the telegraph and less on its Western origin.[92]

[90] On Barak has suggested that British colonization was one of the primary drivers behind the differentiation between the different Ottoman and Egyptian temporalities. See Barak, *On Time*, 19

[91] Brummett, 315

[92] Vanessa Ogle, *The Global Transformation of Time*, 155

The fact that Ottomans did not associate the telegraph with foreign domination is significant as it challenges the persistent belief that Ottoman society was hostile to modern technology and that Ottoman culture was somehow set apart from technological practices. These assumptions rely on a false understanding of technology use as a discreet, utilitarian exercise, rather than one that shapes contemporary perspectives. By exploring the close relationship between the telegraph and Ottoman spatial and temporal concepts, it becomes clear that the technology was far from being a mere tool that individuals plugged into their lives. Rather, the telegraph helped to shape—and symbolize—the fluctuating boundaries of Ottoman modernity.

CONCLUSION

The telegram that came at night consisted of four syllables:
'He passed away'
There was no signature
Only four syllables, and yet, so much.

-Nazim Hikmet, *Gece Gelen Telgraf,* 1931

Knowing when to end is a difficult task for historians. History does not stop on a dime, and the clean cut-off dates used in historical studies belie a messier reality. While this dissertation uses 1911 and the beginning of the Ottoman decade of war as a bookend, the story of the Ottoman telegraph continues on until the end of the empire in 1923, at least. As a result, like all periodizations, there are aspects to this history that feel incomplete. Most obviously, this study does not address the telegraphic operations and maintenance of infrastructure that were central to the Ottoman war efforts in the Tripolitanian War, the Balkan Wars, and World War I. From the mobilization of troops to the communication of strategy, Ottoman wires were alight throughout these conflicts.

This study also does not include the role of the Ottoman telegraph network in the Turkish War of Independence. The post-war nationalist movement that spread throughout Anatolia benefitted from having from the support of Ottoman telegraphers, whose control of the communications network supported the growing strength of the resistance. These partisans supported the advance of the movement by both sending critical communications and blocking messages sent by the Entente forces and the imperial authorities. In what became known as the "telegraph war," this struggle to control the Anatolian network was so central to the ultimate victory of the nationalist movement that Mustafa Kemal supposedly credited the technology with

turning the tide of the war.[1] As a result, the Ottoman-cum-Turkish telegraph network became somewhat mythologized in Turkish nationalist lore, a status owing as much to the modern belief in technological determinism as it does to its actual role in the conflict.

While these exclusions can be accepted as a necessary cost of periodization, there is one remaining part of Ottoman telegraphy that needs to be briefly addressed. It is a bitter chapter, but one that reflects the powerful role of the telegraph in shaping Ottoman modernity. In 1915, the Ottoman state drew on its vast telegraph network to carry out an unprecedented act of mass violence against its Armenian citizens. With electrical speed and bureaucratic discipline, the Ottoman telegraph network facilitated the mass deportation and execution of Armenians over great distance in little time, resulting in the deaths of one million people and the erasure of nearly 90 percent of all Armenians from their historic lands in Anatolia. The distance between the capital and the major Armenian population centers in eastern Anatolia was more than 600 miles, and the area of the deportations covered 80,000 square miles of difficult and remote terrain. Despite the long-distance, the majority of the deportations of Armenians in the eastern provinces took place in a period of just twelve weeks, between May and July of 1915.[2] Such swift, mass violence would have been unthinkable without the technology: Local actors on the ground may have carried out the deeds, but the parameters for the genocide were set by the Ottoman bureaucracy and its telegraphic reach.

While the events of the genocide have been well-documented by a number of historians, highlighting a few critical moments will help to demonstrate the central role of the telegraph in coordinating the violence. On April 24, 1915, the Ottoman Ministry of Interior sent telegrams to

[1] Dankwart A. Rustow, "The Army and the Founding of the Turkish Republic," in *World Politics* 11, no.4 (July 1959), 519

[2] Taner Akcam, *A Shameful Act: The Armenian Genocide* (New York: Holt Paperbacks, 2006), 181

all the governors in the empire, ordering them to restrict the travel of all Armenian citizens.[3] That same day, the ministry also sent a telegram to Ankara, notifying officials there of an incoming train carrying 180 of the Armenian notables who had been rounded up in Istanbul during "Red Sunday" and providing instructions on their detainment at makeshift holding centers.[4] These messages would be followed by a series of telegrams that ordered provincial officials to strip Armenian subjects and organizations of their rights and, eventually, to deport the majority of Armenians in central and eastern Anatolia to identified locations in the deserts of modern day Syria and Iraq.[5] As historians have uncovered, official communications regarding deportation were followed by a series of communications, both handwritten and telegraphed, that ordered the mass execution of these Armenian subjects. Like all Ottoman government telegrams, the messages that ordered this horrific crime were encrypted in a numeric code. But unlike others, these telegrams were also accompanied by an order for the reader to destroy the message after reading. As a result, these coordinated and technologically-enabled acts of state violence took on the appearance of independent incidents of local savagery, an illusion that has been encouraged by historians and Turkish state actors seeking to avoid calling the genocide by the name it deserves.

The centrality of the telegraph in the violence is perhaps most forcibly seen in how telegrams have been used as pieces of evidence that prove the nature and extent of the crime. Recovered telegrams sent by Ottoman officials were both presented and described at the post-

[3] Taner Akcam, *The Young Turks' Crime Against Humanity: The Armenian Genocide and Ethnic Cleansing in the Ottoman Empire* (Princeton: Princeton University Press, 2012), 185

[4] Ibid.

[5] These areas were the provinces of Erzurum, Van, Bitlis, Adana, Mersin, Kozan, and Cebel-i Bereket, the provincial district of Marash, and the counties of Iskenderun, Bilan, Cisr-I Sugur, and Antalya. Akcam, *The Young Turks' Crime Against Humanity,* 193

war tribunal in Istanbul, supporting the case that the carnage was centrally organized, rather than ad hoc incidents of brutality. In some cases, the recovered telegrams offered little room for interpretation. “Have the Armenians who have been dispatched from there been liquidated?” read one telegram from Bahaeddin Şakir, a CUP central committee member, according to testimony from the trial’s first session.[6] Another telegram from an official in Boğazliyan explicitly stated that “deportation means annihilation,” erasing any claims of ignorance on the part of the Ottoman government.[7] In the end, telegraphic evidence proved critical in producing guilty verdicts and death sentences for many of the perpetrators, including Kemal Bey, the governor of Yozgat province, who was one of the few officials who was tried in person and executed for his role in the massacres.[8] In his trial, telegrams sent by him and about him were read out loud to the courtroom and even printed in full in the pages of the daily press.

This lethal application of the telegraph appears to be simultaneously grotesque and fitting of some of the technology’s defining characteristics. As described in this dissertation, the telegraph offered not only a rapid system of communication, but also one that was remarkably mechanized and impersonal in comparison with handwritten, hand-delivered communication. Telegrams reduced language to a system of numerical, electrical code, and as a result, even messages spelling unspeakable violence took on a relatively uniform, ordinary appearance. As observed by Nazim Hikmet, the modern Turkish poet who often engaged with the interplay between the industrial and the human, there was at times a powerful dissonance between the telegraphic medium and message. In his poem, *The Telegraph that Came at Night*, he writes:

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[6] Akcam, *Young Turks’ Crime Against Humanity*, 200

[7] Ibid., 201

[8] Ibid., 212

"The telegram that came at night consisted of four syllables: 'He passed away' There was no signature. Only four syllables, and yet, so much."[9]

In telegraphing violence, Ottoman officials took advantage of the efficient, impersonal medium. Taner Akçam has noted the remarkable indifference present in the orders of Talaat Pasha, the Ottoman minister of interior, in his telegraphic communication regarding the massacres and deportations. For instance, in Talaat's telegrams ordering governors to fastidiously remove the bodies of the dead from the roads and to burn their possessions, the official maintains a bureaucratic banality that seems dissonant with his subject matter.[10] While Akçam points to Talaat's tone as evidence of the minister's cold, calculated approach to mass murder—as well as the state's full complicity in the deeds—it is also important to consider the role of the technology in contributing to this mood. After all, telegraphic communication epitomized the impersonal, disaggregated nature of bureaucratic power, in which violence and force were delivered at a distance. The Ottoman technocrats and their telegrams lent the brutal acts a "sure-footed planning and bureaucratic thoroughness," to borrow a phrase from Holocaust scholar Raul Hilberg.[11]

As with the lethal role of technology and bureaucracy in the Holocaust, the sinister application of the telegraph in the Armenian Genocide should compel us to rethink assumptions about the nature of both modernity and technology. Hannah Arendt and Zygmunt Bauman both argued that the barbarity of the Nazi regime should not be viewed as an aberration of the modern

[9] Nazim Hikmet, *Gece Gelen Telgraf*, 1931

[10] Akcam, *Young Turks' Crime Against Humanity*, 200

[11] Raul Hilberg, *The Destruction of the European Jews* (Chicago: Quadrangle Press, 1961), 39. Originally cited in Christopher Browning, "*The German Bureaucracy and the Holocaust*," in *Genocide: Critical Issues of the Holocaust. A Companion to the Film Genocide*, ed. Alex Grobman and Daniel Landes (Los Angeles: The Simon Wiesenthal Center, 1983)

experience; rather, it should be understood as a hazardous byproduct of bureaucratic and technological processes that are characteristic of the modern age.[12] According to this premise, the dehumanized and disaggregated nature of industrialized societies enabled the very conditions necessary to nurture Nazi ideology and practice alike: the tools and modes of modernity both sanctioned and facilitated the taking of Jewish life. As a result, the industrial technology of the railroad, which was once the symbol of man's inevitable progress, is now irrevocably wrapped up with one of the bleakest chapters of history.[13]

Similarly, any reckoning of the role of the telegraph in shaping Ottoman modernity must also include this dark application of the technology. Like the Holocaust, the Armenian Genocide should not be viewed as a return to a primordial past, but rather as a brutal conflagration of a number of modern processes: the centralization and consolidation of Ottoman state power, the emergence of population management as a state responsibility, the increasingly prevalent logic of industrial rationality, and the growing conviction that religious and linguistic diversity posed a threat to imperial security.[14] In his work, Fuat Dündar has argued that a statistical and mathematical mindset was central to the worldview of the architects of the genocide: the flattened depictions of the population as percentages—and an obsession with a proper proportion

[12] Hannah Arendt, *Origins of Totalitarianism* (New York: Schocken Books, 1951); Zygmunt Bauman, *Modernity and the Holocaust* (Ithaca: Cornell University Press, 1989)

[13] As described by Henry Feingold "(Auschwitz) was also a mundane extension of the modern factory system. Rather than producing goods, the raw material was human beings and the end-product was death, so many units per day marked carefully on the manager's production charts…The brilliantly organized railroad grid of modern Europe carried a new kind of raw material to the factories." See Henry Feingold, "How Unique is the Holocaust?" in *Genocide, Critical Issues of the Holocaust: A Companion to the Film Genocide,* ed. Alex Grobman and Daniel Landes (Los Angeles: Simon Wiesenthal Center and Chappaqua, NY: Rossel Books, 1983), 397-401

[14] Ronald Suny's comprehensive book on the genocide presents a compelling narrative for understanding the violence as connected to the new fears and prerogatives of the modernizing leaders of the Ottoman government, who sought to preserve the empire at all costs. See Ronald Grigor Suny, *"They Can Live in the Desert but Nowhere Else:" A History of the Armenian Genocide.* (Princeton: Princeton University Press, 2015).

of Turkish Muslims to non-Turks and Christians—both fed a preoccupation over demographic engineering and made such inhumane policies possible.[15] Armed with the speed and range of the telegraph network, the Ottoman government was able to fulfil the destructive potential of the modern state that viewed its population as a problem to be solved. To borrow a phrase from Bauman, the genocide demonstrated the "hidden possibilities" of modern Ottoman society, even as it ultimately contributed to its eventual destruction.[16]

In his brief essay on philosophy in the age of genocide, Michael Papazian notes how the violence of the Armenian Genocide has not triggered the same cognitive quandary as the violence of the Holocaust, largely because of the different positions of the Ottomans and the Germans in the European imagination. For the Germans, who represented the height of civilization, the perpetration of such an act was disorienting; for the Turks, who were already considered barbarous to many in Europe, such an act was predictable.[17] By placing modern technology at the center of the Armenian Genocide, it becomes harder to falsely depict the violence as a primordial conflict or an eruption of Turkish savagery. Instead, it can be recognized for what it was: an act of technological barbarity, committed by a modern state.

Yet, while the telegraph was essential to the program of Ottoman state violence against Armenians, this does not mean that the technology can be reduced to merely a tool of a dehumanizing state. Just as the telegraph was key to the centralization of Ottoman state power and the implementation of state violence against Armenians in the empire, it was also critical to efforts aimed at disrupting state power and aiding victims. The Ottoman telegraph network also

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[15] Fuat Dündar, *Crime of Numbers: The Role of Statistics in the Armenian Question (1878-1918)* (New Brunswick: Transaction, 2010)

[16] Bauman, *Modernity and the Holocaust,* 12

[17] Michael Papazian, "Philosophy and the Age of Genocide: Reflections on the Armenian Genocide," in *The Armenian Genocide,* edited by Richard Hovannisian (New Brunswick: Transaction Publishers, 2007), 19.

played an important role in exposing the Hamidian Massacres to the international community during the 1890s, as well as in the subsequent relief effort organized and implemented by Clara Barton and the American Red Cross. Most remarkably, Leslie Davis, an American diplomat stationed at Harput during the genocide, used the Ottoman telegraph network to report the genocide to the American ambassador in Istanbul, and even to send information about the status and whereabouts of Armenian survivors to concerned family members living in the United States.[18] By anglicizing Armenian names and using other tricks to obliquely convey information, Davis was able to evade the Ottoman censors and respond to the 1,200 requests for information that he received.[19] In some of the cases, Davis was also able to arrange remittance payments that brought critical relief to the surviving Armenians, who remained in hiding until the end of the war.

The fact that the technology was both a tool of a domineering state and a means for restoring Armenian life is consistent with one of the larger arguments of this dissertation: that the social and cultural effects of the telegraph in Ottoman society were often contradictory and in tension with one another. Just as the technology strengthened the Ottoman state and prompted it to take on new technical and territorial responsibilities, so did it further embed the empire into a world governed by technology, capital, and technical norms determined beyond Ottoman borders. Similarly, just as the technology united Ottoman society with other telegraphic cultures through the emergence of a new, shared framework for thinking about time and space, so too did it intersect with local, imperial factors to produce temporal and spatial conceptions that were

[18] This extraordinary story is recorded in Leslie Davis's report on the genocide. See Leslie Davis, *The Slaughterhouse Province: An American Diplomat's Report on the Armenian Genocide, 1915-1917*. Edited by Susan Blair. (New York: Orpheus Books, 1989).

[19] Davis, *The Slaughterhouse Province,* 102

unique to the Ottoman context. Far from being a simple story of technical cause and social effect, the history of the Ottoman telegraph is one that demonstrates the complex ways in which society and technology shape each other, and reveals the competing impulses that can be present within the same sociotechnical system.

At a time in which societies across the world are struggling to understand the cost and benefits of a new crop of modern communication technologies, particularly those related to social media and artificial intelligence, it is increasingly important to resist the temptation of technological determinism in both our contemporary and historical analysis. Rather than viewing technology as determining history, it is far more useful to view it as offering a set of new possibilities, many of which might be contradictory but not mutually exclusive. Lynn White, in an attempt to diminish the technological determinism that many saw in his work, said "a new device merely opens a door; it does not compel one to enter."[20] Building on this, it might be said that technology in fact opens many opposing doors that society can enter simultaneously, as seen with the ambivalent role of the Ottoman telegraph network in both consolidating state power and binding Ottoman society to a larger material and epistemic framework made possible by a global telegraph network. By emphasizing the social aspects of the Ottoman telegraph system and the technical facets of Ottoman social transformation, this dissertation reveals a more complete picture of the significant, but not deterministic, role of technology in shaping Ottoman modernity.

[20] Lynn White, Jr., *Medieval Technology and Social Change* (New York: Oxford University Press, 1962), 28

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