A CRITICAL PERSPECTIVE ON SCIENTIFIC AND TECHNOLOGICAL INPUT IN LATE OTTOMAN COTTON CULTIVATION, 1840–1876

UTKU CAN AKIN

BOĞAZİÇİ UNIVERSITY

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A CRITICAL PERSPECTIVE ON SCIENTIFIC AND TECHNOLOGICAL INPUT IN LATE OTTOMAN COTTON CULTIVATION, 1840–1876

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Utku Can Akın

Boğaziçi University

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A Critical Perspective on Scientific and Technological Input

In Late Ottoman Cotton Cultivation, 1840–1876

The thesis of Utku Can Akın

has been approved by:

Prof. Edhem Eldem
(Thesis Advisor) _____

Assist. Prof. Yaşar Tolga Cora _____

Assist. Prof. Berrak Burçak Della Fave
(External Member) _____

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DECLARATION OF ORIGINALITY

I, Utku Can Akın, certify that

- I am the sole author of this thesis and that I have fully acknowledged and documented in my thesis all sources of ideas and words, including digital resources, which have been produced or published by another person or institution;
- this thesis contains no material that has been submitted or accepted for a degree or diploma in any other educational institution;
- this is a true copy of the thesis approved by my advisor and thesis committee at Boğaziçi University, including final revisions required by them.

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ABSTRACT

A Critical Perspective on Scientific and Technological Input

In Late Ottoman Cotton Cultivation, 1840–1876

This thesis examines the role of scientific and technological input as a transformative and driving force in Ottoman cotton cultivation between 1840 and 1876. These two entities, with their controversial coexistence, make an alternative view in historiography demandable. The new cotton production methods and techniques, emerged in parallel with the perception of science that started to be institutionalised in the nineteenth century, shaped cotton cultivation and production patterns with a sense of association rather than a societal understanding. These associations exhibit a dynamic nature rather than the static structures often encountered in different social science theories, rendering all human-centred approaches that accept the agent as exclusively human and based on the world-human duality ineffective. Focusing on the dynamic partnerships of local and foreign actors/objects that were established, disintegrated, reunited, and transformed, this thesis explores the structures that remoulded the Ottoman cotton production process in "non-radical chaotic systems" created by non-human agents through the combination of scientific and technological input engendered by various partnerships, not based on a single intermediary, supply-demand, and a state-centred approach. Thus, especially during the years of the American Civil War, the agents directing cotton production in the Ottoman Empire and the networks of these agents become visible. The thesis proposes to evaluate these non-/human agents under three categories: sensory, entrepreneurial, and transmitter actors. These actors' fluid decisions, behaviours, and actions have shaped and transformed the cotton production process in the late Ottoman era.

ÖZET

Geç Osmanlı Pamuk Yetiştiriciliğinde
Bilimsel ve Teknolojik Girdiye Eleştirel Bir Bakış, 1840–1876

Bu tez, 1840 ve 1876 yılları arasında Osmanlı pamuk yetiştiriciliğinde dönüştürücü ve itici bir güç olarak bilimsel ve teknolojik girdinin rolünü incelemektedir. Tartışmalı birliktelikleriyle bu iki girdi, tarih yazımında alternatif bir bakışı talep edilebilir kılmaktadır. On dokuzuncu yüzyılda kurumsallaşmaya başlayan bilim anlayışına paralel olarak ortaya çıkan yeni pamuk üretim usul ve teknikleri, pamuk yetiştiriciliğini ve üretim kalıplarını bütüncül bir toplumsal anlayıştan ziyade bir ortaklık anlayışıyla şekillendirmiştir. Bu ortaklıklar, farklı sosyal bilim teorilerinde sıklıkla karşılaşılan durağan yapılardan ziyade devingen bir doğa sergilemekte, faili yalnızca insan olarak kabul eden ve dünya-insan ikiliğini temel alan tüm insan merkezli yaklaşımları etkisiz hale getirmektedir. Yerli ve yabancı aktörlerin/nesnelerin kurulan, dağılan, yeniden bir araya gelen ve dönüşen devingen ortaklıklarına odaklanan bu tez, Osmanlı pamuk üretim sürecini dönüştüren yapıları, tekil failler, arz-talep ve devlet merkezli bir yaklaşımla değil, türlü ortaklıkların doğurduğu bilimsel ve teknolojik girdinin bir aradalığında rol oynayan insan-dışı faillerin yarattıkları "radikal olmayan kaotik sistemler" içinde incelemektedir. Böylece, bilhassa Amerikan İç Savaşı yıllarında, Osmanlı İmparatorluğu'nda pamuk üretimine yön veren failler ve bu faillerin ağları görünür hale gelmektedir. Tez, insan ve insan olmayan bu failleri üç kategori altında değerlendirmeyi önermektedir. Bu kategoriler, duyusal, girişimci ve nakilci aktörlerdir. Bu aktörlerin değişken kararları, davranışları ve eylemleri geç Osmanlı döneminde pamuk üretim sürecini şekillendirmiş ve dönüştürmüştür.

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Dedicated to

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NOTES ON SPELLING AND TRANSLITERATION

In this thesis, proper names of historical figures or place names widely known today are rendered in their most commonly used forms in modern Turkish for convenience. A strict transliteration is not preferred here. In this regard, the *TDV İslâm Ansiklopedisi* is taken as a basis. If English equivalents of geographical nomenclature are available, their English versions are preferred instead of the commonly known Turkish versions, unless necessary. The transliteration system developed by the *International Journal of Middle Eastern Studies* (IJMES) for Arabic, Persian, and Turkish is used for all the remaining Ottoman Turkish texts. Since there is no consonantal distinction between Ottoman Turkish and modern Turkish for the letters خ and ه/ـه in the IJMES Transliteration System, *ḫ* for the letter خ has been borrowed from the transliteration alphabet of the *TDV İslâm Ansiklopedisi* when it comes to these letters—the letter *h* continued to be used for ه/ـه. For Arabic or Persian genitive constructions, the *TDV İslâm Ansiklopedisi* and *Kubbealtı Lugatı* are taken as a basis in line with Turkish sound and naming rules. Following *The Chicago Manual of Style*, foreign or emphatic terms are italicised only when they first appear. Abbreviations, such as the Cotton Supply Association (CSA), are likewise indicated only when they appear first; abbreviated forms are favoured in subsequent uses. Gregorian equivalents of *Hicrī* and *Rūmī* dates are always noted in square brackets. The implied distinctions between the usages of the Ottoman Empire and Turkey are mentioned in the main text. Last but not least, unless otherwise stated, all translations and transliterations in the thesis are my own.

CHAPTER 1

INTRODUCTION

When writing a story, analysing an object, or constructing a historical narrative, the first thing to do is determine its boundaries in time and space. Accordingly, when the areas where cotton cultivation was practised and expanded in the Ottoman lands are examined, Adana, Aleppo, Aydın, Balıkesir, Brussa (Bursa), Cyprus, Damascus, Denizli, Edirne, Gallipoli, Monastir (Bitola), Mersin, Salonica (Thessaloníki), Skopje (Üsküb), and Smyrna (Izmir) come to the fore—rather, there is a predominantly Rumelian and western Anatolian distribution.[1] The enterprises that flourished in these cities and the social as well as material dynamics of these enterprises, and the years when new collaborations were made mandatory and global technology developments concerning cotton manifested in accordance with local conditions, it is seen that the period of cotton in the nineteenth century mostly corresponds to the years of the American Civil War (1861–1865). Within these limits, it is essential to address the central debates in the literature first because they determine the scope of the thesis. The effects of localised global trends on Ottoman social and economic life can only be understood when the dynamic structure that is not reflected in the global production scale is handled with a narrative that does not fix and frame these effects but follows their marks and traces. Spreading boundaries in question all over the narrative constrains the study of the agents and their influence. The multifaceted and

[1] According to the results of the questionnaires of the British consuls in 1871, the consulates in places, such as Aleppo, Brussa, Cyprus, Monastir, Salonica, and Smyrna, where cotton production was carried out, gave the answer that their "commercial" functions predominated. Suez and Alexandria consulates, who also reported that their commercial aspect was dominant, were excluded from the scope of the thesis on purpose because they were involved in cotton production in Egypt. *Reports Relative to British Consular Establishments: 1858 & 1871*, vol. LX, c. 530, at 53, 83, 90, 146, 151, 188, 206.

dynamic structure in cotton production disappears that being the case. To defend this point of view in the thesis, a narrative moving from general discussions to specific—from debates in the literature to the practice of scientific and technological input—will be drawn.

First, one of the reasons why some aspects of this dynamic structure are lost on the global scale of production is the reductionist approaches of dreary grand narratives that focus only on values at the economic scale and the domination of society or capital. Second, in historiographical approaches, especially in commodity histories, technologies, such as factories, cotton gins, cotton seeds, scientists, and production, are deconstructed, and the existing knowledge set and scientific activity are pushed into the spiral of capital and politics. The entire story of the commodity is reduced to malicious accounts of actors and their socio-economic effects, as in Sven Beckert's distinguished work *Empire of Cotton: A Global History* (2014) or Orhan Kurmuş's *Emperyalizmin Türkiye'ye Girişi* (1974),[2] which is also the first notable and regional study on this subject in terms of Ottoman history. Considering the narrowly defined economic structures as well as property relations, such as state ownership of land and, more generally, the social and economic position of the state—in some cases, companies and enterprises as well—was assumed to save the narrative from economic reductionism. Another weakness of these approaches, or at least some of them, is their concurrent endorsement that (i) economic developments in the course of history affect social and political developments and (ii) social, political, and cultural structures can be effective and even determinant on economic developments. These two contradictory propositions are defended together because

[2] As Kurmuş also mentions in the preface of his book, *Emperyalizmin Türkiye'ye Girişi*, it is an abbreviated version of his relevant doctoral dissertation translated into Turkish, for which, please see Kurmuş, "The Role of British Capital in the Economic Development of Western Anatolia, 1850−1913" (PhD diss., SOAS University of London, 1974).

scholars want to exhibit neither economic reductionism nor essentialism. In addition, it is an axiomatic line of reasoning to talk about a capitalist unit because every person strives for their benefit or profit within the intricate network of economic relations.

Historians who write with a global history approach—just as historians using theoretical frameworks with a level of universality—also face the danger of emphasising the common dimensions of the societies they study and of ignoring their peculiar aspects. In other words, while trying to explain the economic structures and why and how these structures were transformed, many factors, such as mentality and climate, are left out of the narrative. This is an escapist attitude that stays away from the mess of events. These approaches, which hold on to their preferred form of political truth and assume that *power* is the most critical variable and driving force behind events, miss being an alternative to the dominant discourses of the natural and social sciences. Although traditional social theories, in hackneyed old meta-narratives about "modernisation" within what might be termed an "internalist paradigm,"[3] have been surpassed in explaining historical phenomena internally and typically analysing them within the boundaries of society, narratives that *entirely* transcend these out-of-date trajectories have not been discovered yet. Modern theories tend to establish certain relationships among factors and to place various factors in a certain hierarchy in order of priority. It was unfortunate that the approaches presented as alternatives also faced similar drawbacks. The old narratives have been turned upside down like a slate and basically the internal dynamics of societies have been pushed into the background. It is assumed that the social change is always the result of influences and external parameters powerful than the society

[3] Conrad, *What Is Global History?*, 88.

itself. In these approaches where everything is deconstructed, moralism's narrative of regimes of power and domination is left out of this deconstruction.[4]

Going back to the main literature, evaluating the expansion in Turkey's cotton production during the American Civil War only as a result of foreign demand, that is, surrendering to a form of economic reductionism, cause the role of many actors, networks, and non-/human factors become invisible—in the framework of the thesis, each of these is considered as an *object*.[5] However, since the discovery of new collections of documents that will completely change historiography is not a frequent occurrence, the documents remain in the background, and the genealogy of words may be brought to the fore. Previously used documents are read and over-read. There is, of course, the necessity and benefit of theory adjustments and, where necessary, re-reading the documents. Nevertheless, when this necessity is not meaningful, the complacency and contentment of not writing the history of great men or avoiding economic reductionism may eventually give way to a background that adds nothing to the field. One way of circumventing this paradox is to go after the actors/objects, assuming that all actors/objects form partnerships in such a way as to put others—including inanimate objects—into action. This act of pursuit is not done by the transmission of a force that remains the same as a kind of loyal agent but by

[4] A reason for this tendency is that history is perceived as an exclusively constructed structure, and historians are deemed to be social constructivists. However, any event that started to take place in the past (t_1) and will never end ontologically (t_∞) cannot consist of a structure whose essence has been built. Hence, it is concluded that the historian is not only a social constructivist. Not every reality is socially constructed. For instance, there is an ontological difference between being sick and being married. Marriage is a socially constructed reality, whereas illness is not always a socially constructed reality. History, like all forms of knowledge, has its *unamendable* aspects. This issue of *unamendability* will be discussed later.

[5] All actors in the thesis will be discussed under the *object* category to avoid falling into the world-human dilemma. Anything that cannot be wholly reduced to its components or effects on other things is an object. When something cannot be reduced entirely to its components and effects, it stands on its own, so agency ceases to be a solitary human concept. Only in this way can the object become active. Traditional object approaches are highly Kantian. According to Kant, the object emerges through the activity of empirical synthesis, that is, by giving unity to the animated representation, in which imagination is regenerative, with thinking (judgmental verb). Gözkân, *Kant'ın Şemsiyesi*, 57. Thus, the agency of the object is left behind the human in advance.

examining the transformations unleashed by many contingencies triggered by new partnerships that follow along the line. A situation can best be understood by assessing which entities have influence there instead of explaining what these entities are *in advance*, and by closely following them and all they do to the utmost.

What, then, does the historian who follows such an approach do differently? For example, in writing the history of Louis Pasteur's groundbreaking work in chemistry and microbiology, to examine all the actors/objects (and agents) involved in the making of his work, this type of historian includes every scientist who worked with him in Pasteur's career, following the experimental tools, chemicals, vaccines, and serums that Pasteur used in his experiments as well as written sources of the period and even bank accounts and checks. It turns out that even an object as simple as a temperature gauge contains many possibilities of action and use that can be explored. None of these objects plays a role as a passive participant in the narrative. Thus, the historian realises that something analogous to a *symbiosis* takes place in the discipline of history. Not only living cells but also institutions, medals, plant fossils, railroad tracks, porter's (*ḥammāl*) baskets, and historical objects can develop a symbiosis with other entities. Moreover, unlike most social theories, this symbiosis does not have to be reciprocal. Interrelationships often play an indispensable role in the study of history and in the social sciences, which is beyond dispute. On the other hand, many misrelationships—or false associations—can be avoided when it is understood through a proposed object-oriented historiography which argues that the relations are not always reciprocal. In this way, no actor/object or agent is made indebted to each other for no reason. Object-oriented ontologist and philosopher Graham Harman evaluates the Greek War of Independence in this context. Even though this war transformed Lord Byron's poetry, his poetry did not transform or

have an impact on the Greek nation.[6] This illustrative example indicates that a reciprocal relationship is not always necessary for symbiosis. Also, with this approach, it is evident that the relationship is not just an exchange. Attributes and effects do not always have to be exchanged. Often in a symbiosis, two objects make each other obvious, that is, reveal each other's qualities and effects. In the following sections, this perspective will play a critical role in addressing the relationship between all animate and inanimate actors/objects in the Ottoman lands with respect to cotton cultivation processes.

The approach being discussed here concludes that there are many more agents than historians and social scientists realise and that non-human agents should be treated on a more equal footing with human ones in historiography. To such an extent that history is a field in which even the so-called 'great men' are not fixed entities in the hands of those who try to understand how history feeds on uncertainties without prejudicing how it transforms. In such a field, the material facts that tend to keep the great men great are inclined to be hanging in the background; but instead of disappearing in their own networks, they expose themselves. In other words, it puts them on a more equal basis with other actors/objects rather than conferring their greatness on them. The material facts, which are seen as a part of the networks of relations and examined in the dynamic structure of these networks, demonstrate that the great men do not always play the leading roles. In some events, they are often not even in the position to make the final decision or to set things in motion. In a sense, inanimate actors/objects, such as roads, buildings, contracts, banknotes, and various technology products, play a (de)stabilising role in the narrative. In this respect, the ontological state of great men can be compared to the

[6] Harman, *Object-Oriented Ontology*, 112.

nearly hundred billion neurons in the human nervous system. Just as there are various protein molecules with special functions in neurons, these great men were embedded in objects with different dynamics, no different from the so-called 'ordinary men' who had once been regarded as smaller and unimportant than these great men in the tradition of historiography. Despite being overflowing with the material opportunities their identities bestowed upon them, these great men could not maintain their identities and privileges without the structures long considered small to break down essential nutrients and provide them with energy.

No actor/object is separated from other actors/objects solely due to their identity. It is the sum of all their qualities and influences that distinguishes actors/objects from one another. Nonetheless, there will be some qualities and effects that are overlooked or undetected, and no field of study can exhaust all the qualities of an actor/object and its relations to the others. For this reason, the existence and agency of the actor/object will continue to be a dynamic field of research for historians. Yet, a classification can be made based on the available information to make the narrative possible. Notwithstanding the fact that this is simplified quite a bit in a scientific sense, the classification in question is reminiscent of neurons divided according to their functions: sensory neurons, motor neurons, and interneurons. First of all, sensory neurons transmit the information they receive from the environment basically through smell, taste, touch, and sound to the brain. In this context, the producers and carriers of knowledge in the narrative will be considered as *sensory actors* in the scope of the thesis. The information obtained goes through a scientific and historical synthesis and production process in the hands of sensory actors—they do not always have to be human. Non-human actors or all *objects* in a broad sense should always be kept in mind. Secondly, motor neurons provide

movement by controlling the contraction of muscles. The entrepreneurs in the narrative will be *entrepreneurial actors*, inspired by the working principle of motor neurons. Thirdly, *transmitter actors* will connect sensory actors and entrepreneurial actors in the narrative, just as interneurons form circuits. Accordingly, the differences between introverted and extroverted actions—towards domestic and foreign markets—of both local and global actors/objects will be delineated in the narrative without being confused with each other.

Although no one doubts the existence of a mind-independent material world, at least it is hoped so, since this material world and its ontology are not preceded, the agency of commodities in historical narratives and, above all, their possessions merely because of their existence are ignored or overlooked. While there is no doubt that hammers drive nails, ovens bake the dough, theatre decors bring the stage to life, and seat belts keep people alive during an accident, the narrative is never set up that way. Even though the fracking method, which enables the extraction of shale gas and shale oil that could not be extracted before by pumping a certain mixture into layers thousands of metres below the ground, has occupied American domestic politics for a while, the aspect of this method that imposes its existence on people is not discussed in the narrative. While human beings do not even form a quarter of ontology, it has not been possible to overcome the limitations of the anthropocentric approach, which has never been questioned or only weakly questioned. It is difficult to see how non-human things would act in a thought where the action is a priori intentional, that is, constrained by the actions of humans. When ontological questions are asked, it turns out that just as humans communicate through sound waves and writing, dolphins and whales through sonar, and octopuses and other cephalopods communicate through colour patterns on their skin, machines communicate with

energy flows between their mechanical parts. Ontology's sensitivity to these differences, expressing what they are and thinking about the different kinds of machines that exist and their distinguishing features can contribute to historiography. For example, a historian writing the history of the pen, if s/he considers the pen as a machine, that is, if s/he thinks about an ontological problem, might ask the following questions: 'Did the use of the pen change the bone and muscle or neurological structure of the human hand? In which historical events did this change play a role?' Thus, the intricate technology of the machine finds a place for itself in a narrative in which biological agents swarm. Since it is not reduced to epistemology and its structure is handled ontologically, it reaches a more equal level with biological agents in terms of agency. What makes such a narrative important is not only that, as Jane Bennett puts it in his book *Vibrant Matter: A Political Ecology of Things* (2010), it incorporates non-human forces into the narrative as agents and resists human narcissistic tendencies.[7] More importantly, a historian studying the history of numeral systems with such an approach may realise that the operation of numbers in the Roman numeral system complicates operations such as division, multiplication, algebra, and calculus.

Inspired by contemporary debates on the history and philosophy of science and technology and the perspectives of speculative realism, such as *object-oriented ontology*,[8] *new realism*,[9] and Bruno Latour's *actor-network theory* (ANT),[10] this

[7] Bennett, *Vibrant Matter*, xvi.
[8] "The world is not the world as manifest to humans; to think a reality beyond our thinking is not nonsense, but obligatory." Harman, "On Undermining of Objects," 26.
[9] Maurizio Ferraris explains this approach with the example of water. Even though it is perspicuous that language, diagrams, and categories are needed to know that water is H_2O, the fact that water is H_2O is utterly independent of any human knowledge. So much so that water was H_2O even before the science of chemistry existed, and it will continue to be so even if all humans disappear from the face of the earth. Ferraris calls this "unamendability," viz., the highlight of reality. For the continuation of the related discussion, please see Ferraris, *Manifesto of New Realism*, 19.
[10] Bruno Latour argues in this approach that the researcher can only observe small-scale forms of interaction experimentally and empirically, so s/he should focus on the dynamics of these interactions,

thesis covers the period from the 1840s, with the first model farm (*ferme modèle*) established in the Ottoman Empire in 1847, to the deposition of Sultan Abdülaziz in 1876.[11] It focuses on the interactions of actors/objects and structures that emerged in cotton cultivation and especially during the years of the American Civil War. Within the scope of the thesis, based on the ANT's rather abbreviated slogan "[f]ollow the actors . . . ," a narrative that follows the actors/objects and their networks will be established revolving around the question of 'which collaborations were found within the boundaries of cotton cultivation between 1840 and 1876.'[12] That being the case, the narrative will go beyond Bruno Latour's *flat ontology*[13] and affirm that phenomena are more than their relationships and effects, based on object-oriented ontologist Graham Harman. Therefore, an alternative will be put forward to the perspectives of structuralist and post-structuralist approaches that deal with phenomena only through their relationships or effects.

In the second chapter, the thesis will investigate the prevailing agricultural initiatives of the Ottoman government and society, in which local and foreign actors/objects from all classes and identities played a role accompanied by the desperate industrialisation move of the state during the years of economic

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not on larger structures. For instance, society should not be seen as "a place, a thing, a domain, or a kind of stuff" but should be comprehended as "a provisional movement of new associations." Latour, *Reassembling the Social*, 238. As stated by Latour, if connections are made between spaces, these connections need to be made by more "descriptions," not the quick way, with ubiquitous associations or "entities," such as "[s]ociety, [c]apitalism, [e]mpire, [n]orms, [i]ndividualism, [f]ields," and the like. Latour, *Reassembling the Social*, 137.

[11] In object-oriented ontology, objects exist independently of human perception, and their existence cannot be reduced to their effects and components. Thus, man cannot be thought of at the centre of the universe as they once were, the anthropomorphic philosophy to date should be set aside, and things or objects that are now accepted to exist/can exist without the human subject should be restored to their own reality and autonomy. For more elaboration, please see Harman, *Object-Oriented Ontology*.

[12] Latour, *Reassembling the Social*, 68.

[13] It is a discourse of reality that claims all objects, whether imaginary or fictional, have the same degree of existence as any other object. In line with this approach, no object is more a subject than another. To rephrase it, anything that can be handled on its own is an object. Because if something cannot be reduced to its components or effects, either nothing or something remains, which is the object; in other words, it is called what can be handled on its own.

dependence of the British cotton market on the southern United States for the supply of raw cotton.[14] The actors/objects in the *Zirāʿat Taʿlīm-ḫānesi* (Agricultural Training School)[15] and the Taʿlīm-ḫāne's model farm located in the industrial zone on the Bakırköy-Zeytinburnu line, the relations between the actors/objects, and the furcations that this project created in the past and future of Ottoman cotton cultivation will be discussed. In this section, the unstable stance of the Ottoman Empire is discussed with its project of realising both industrial and agricultural breakthroughs simultaneously.

In the third chapter, financial and infrastructural as well as scientific and technological actions will be taken as three different interrelated categories. The institutions and initiatives to be included in this section will be examined in their three phases for the purpose of surveying the change of their movements in the symbiosis. These phases are the *maturation* phase, the *deterioration* phase, and the *inactivation* phase. Corresponding to this approach, when the survival of an institution or venture becomes unfeasible for its shareholders, the maturation phase ends, and the phase of deterioration begins. The last phase is called the phase of inactivation to bring an alternative to linear and finite narratives. This alternative approach argues that the loss of effect of something does not necessarily mean that it is over. The beginning, like the end, cannot be conceived from a fixed point. Any experience of objective or fictional beings need not necessarily be limited to a human

[14] "British cotton manufacturers were seeking an alternative to dependence on the United States, whose Southern economy was anyway an unsatisfactory market for British manufactures." Hyam, *Britain's Imperial Century*, 54. In some publications, it was described as the "evil of dependency." A Fellow of the Royal Geographical Society, *The Cotton Supply. A Letter to John Cheetham, Esq. President of the Manchester Cotton-Supply Association* (1861), 3.

[15] Although the word *taʿlīm-ḫāne* does not directly mean school (*mekteb*), it contains the meaning of a place where education is received. The term "training" was preferred instead of "practical" because the training given in the Taʿlīm-ḫāne was not entirely practice-based. However, this discussion is not very meaningful in an age where taʿlīm-ḫāne is used instead of mekteb, and mekteb is used instead of taʿlīm-ḫāne, and, of course, standardisation cannot be mentioned under these circumstances.

temporal, social, or linguistic structure. Quentin Meillassoux expresses this condition in opposition to the claim that the laws of nature are *necessary* (according to him, they are *contingent*): ". . . it is in fact not contradictory for nature to obey up to time *t* a certain number of physical constancies and to stop obeying them at time *t + 1*."[16]

The identity of institutions will also be problematised in the narrative because while writing the story of cotton in the nineteenth-century Ottoman Empire, the complicated identity of enterprises puts a heavy burden on the historian's shoulders. The complex structure of cotton enterprises can be compared to the corporate structure of the *Bank-ı ʿOs̲mānī-i Şāhāne* (Imperial Ottoman Bank). Foreignness and locality are intertwined within this complex configuration.[17] Actors who were not Ottoman subjects were Ottoman enough to be aware of what was happening around them and even to intervene, but they were also foreign to evaluate them without bias. In this respect, for the historiography of the period in question, writings of non-Ottoman actors provide very divergent and, in some regards, much more interesting information compared to the existing state-based archival documents. However, this does not mean that they can take the place of state archives on their own. It is a fact that the Ottoman State Archive (BOA)[18] was overlooked by some scholars working on cotton cultivation in the Ottoman Empire for reasons such as language deficiency

[16] Meillassoux and Asimov, *Science Fiction and Extro-Science Fiction*, 9.
[17] Göktay, "Tarihle Dolu Bir Yaşam: Edhem Eldem," 4. Eldem also explicates this situation through the corporate structure of the Ottoman Bank. What is forgotten, according to Eldem, is that the Ottoman Bank is, first and foremost, a private bank. Before any political concern, it is necessary to think through "profit maximisation" when evaluating the functioning and policies of the Ottoman Bank: "Dolayısıyla, Osmanlı Bankası'nı gerçek anlamda Osmanlı hükümetinin emir ve hizmetinde bir kurum olarak düşünmek ne kadar az gerçekçi ise, Paris ve Londra hükümetlerinin bir maşası olarak görmek de o denli yanıltıcı olacaktır." [Therefore, the less realistic it is to think of the Ottoman Bank, in real terms, as an institution under the command and service of the Ottoman government, it would be just as misleading to see it as an apparatus of the governments of Paris and London.] Eldem, *135 Yıllık Bir Hazine*, 18.
[18] The *Başbakanlık Osmanlı Arşivi* (Prime Ministry Ottoman Archive) of Turkey, hereinafter abbreviated as BOA, although the Prime Ministry State Archives has now been replaced with the Presidency of State Archives.

in Ottoman Turkish.[19] When the abundance of documents revealing that complex structure is not provided, there is a threat of abusive interpretation of the actors' concern for profit and the value they have added to the Ottoman cities, urban centres, and towns through their initiatives. Even though this trend has waned, some theories, such as *world-systems theory*, which is essentially a non-malicious interpretation, have been incorporated into these malicious or conspiratorial readings. For example, a one-sided "imperialist penetration" narrative was derived from foreign initiatives on cotton production in the Ottoman lands. Nevertheless, a different perspective and thus new insights are entirely possible by investigating the documents of foreign actors and the primary sources to be obtained from several state and local archives.

In fact, this situation can be understood more clearly through the example of symbiosis briefly mentioned in the previous paragraphs. In symbiosis, which is a biological process, the parasite acquires a new home inside the cell, and when the cell divides, it also divides. At the same time, the host secures the backing of a parasite, which does not live there as a mere parasite—for instance, its ability to process atmospheric oxygen, the deficiency of which can be fatal to the cell.[20] This analogy can be applied not only to the relationship between foreign and local actors in the Ottoman lands but also to the relationship between the Ottoman Empire and Britain and France in the *Tanẓīmāt* (Reorganisation/Reforms) period. The following footnote for the definition of the "Well Guarded Empire"[21] (*Memālik-i Maḥrūse*, or more appropriately in English, the Well-Protected Domains) in a news report in the British press is mischievous in terms of hinting at both the well-known British

[19] Within the time frame of this thesis, there are very few academic studies on cotton cultivation in the Ottoman Empire. When it comes to scientific and technological input in cotton cultivation, the number decreases even more.
[20] Harman, *Object-Oriented Ontology*, 112.
[21] "Turkey. The Great Exhibition in Constantinople," *Public Opinion* (27 December 1862): 1118–19.

humour and the bilateral relations during the Tanẓīmāt era: "That is, Turkey, or the Memalik Mahrusé [*sic*], as the Turks call it, which some may consider as an unconscious sarcasm on themselves."[22] This witty language aside, establishing a one-sided and static model of relationship creates a meaningless and irrational picture for both parties.

World-systems theory will also be excluded from the scope of the thesis as can be deduced from the previous paragraphs, in order to avoid the rough-hewn approaches mentioned so far, while recognising the historical context and the value it has added to the literature.[23] The major reasons for this exclusion are: the theory's defective performance in capturing the dynamics and volatility of capitalism, exhibiting a form of economic reductionism, and the generalisation of the concept of capitalism (i.e., "the endless accumulation of capital") on which it is based, to the extent that it obscures all historical intricacies and nuances.[24] Apart from everything else, the argument that there are groups, which benefit from the relations that one can formulate within the framework of the world economy in every state, is nothing more than a Swiss army knife that adapts to every context. As an additional reason, it can be argued that world-systems theory prioritises supra-regional and global integration over social and local dynamics as well as cultural interpretations and considers these aspects of the issue as of secondary importance. The theory's secondary emphasis on the extent to which the integration of markets is itself the product of an asymmetrical balance of power is inconsistent with the examination of social phenomena selected in the thesis. Like many other social scientific explanations, the economic explanation is per se less than the whole it attempts to explain for it is blind to

[22] Ibid.
[23] For a study using this theory in the context of cotton, please see Kasaba, *The Ottoman Empire and the World Economy—The Nineteenth Century* (1988).
[24] Wallerstein, *World-Systems Analysis*, 2.

everything it does not investigate. It is only a part of the whole, not itself. With such an approach, which this thesis is against in principle, there is a danger of making the mistake of seeing Europe, as the only driving force actively shaping world history, that is, as the mere source of world history. Robert Marks summarises the idea behind this danger as follows: "Europe acts; the rest of the world responds. Europe has 'agency;' the rest of the world is passive. Europe makes history; the rest of the world has none until it is brought into contact with Europe. Europe is the center [*sic*]; the rest of the world is its periphery."[25] In other words, Europe is a superior centre, while Europeans, as leading actors, can initiate and shape transformation or the so-called "modernisation" on their own, while others do not have such a capability or, moreover, a desire. Then, the logical inference follows that the capability and desire that emerged at some point in history were also part of the imagination and success of the Europeans.[26]

In the third chapter, it will also be discussed that scientific and technological input(s) come to the forefront as the factors that create uncertainty together with non-human actors/objects in the actions of cooperation and dissolution. Consequently, a more comprehensive narrative will be established rather than the approaches that have dealt with technology transfer in a passive and dependent way, only through the eyes and resources of the centre. In that case, how is it possible to treat an actor in this way? For instance, Hyde Clarke, one of the actors that determined the cotton production strategy of the Manchester-based Cotton Supply Association (CSA), was

[25] Marks, *The Origins of the Modern World*, 8.
[26] Similar problems are noticed in both historians and social scientists, who try to put the period, society, and geography they study in a narrative exclusively utilising the Western methodologies, trends, and theories. While it was expected to open new epochs in the study of the social fabric with the incorporation of Western theoretical debates into Ottoman historiography in an "import-substitution" fashion, new problems emerged. For further discussion, please see Eldem, "Osmanlı Tarihini Türklerden Kurtarmak," 268–69; Yazıcıoğlu, "Edhem Eldem ile Söyleşi," 44; and Kurt and Gürpınar, "Edhem Eldem: Türk Üniversiteleri Hep 'Milli' Bahçe İçinde Oynadı," 286.

a "social scientist" and anthropologist. On the other hand, Dr Richard Ford Foote, one of the founders of the Imperial Medical Society and a member of the British Literary and Scientific Institution at Pera, was the editor-in-chief of *The Levant Quarterly Review of Literature and Science* (1860–1863).[27] In both cases, the roles of actors/objects shaped internally different structures. These internal distinctions of actors/objects have been largely ignored. A research programme that focuses on the traces left by actors/objects following their own paths and their activities in creating and breaking partnerships, rather than focusing on the mere level of analysis and what kind of groups they are, will make a difference in the contemporary debates of the history and philosophy of science and technology.

In the fourth chapter, it will be uncovered that the uncertainties examined and discussed in the third chapter do not muddy the water; on the contrary, any phenomenon can be analysed more thoroughly when focusing on actors and networks that bring about these uncertainties. Thus, it will be underlined that when it comes to the "chicken-egg dilemma," the correct approach is to make peace with the confusion that it is impossible to determine the result—science and technology are so intertwined that they cannot be separated. Furthermore, it will be stated that not only demand but also factors, such as scientific and technological input, considered within the scope of uncertainties affect the increase in cotton production during the American Civil War.

All these point to the central argument of the thesis and conclusion that the foreign cotton entrepreneurs in the Ottoman Empire, primarily British (but also including the local ones to a lesser extent), attempted to homogenise the differences

[27] Foote, "A Lecture on the Necessity of a Levant Quarterly Journal of Literature, Science, and General Information," *The Levant Quarterly Review of Literature and Science* (July 1860): 1–2.

between Egypt, India, the West Indies, and the Ottoman Empire. This tendency to simplify the cases caused them to neglect the socio-economic and political structure of the Ottoman Empire as well as non-human aspects and to conceive the *social* as only having a share in a commercial commitment. Their attitude was also one of the main reasons why cotton production in Turkey fell short of expectations. For example, the CSA argued that cotton production would escalate by solving the Ottoman Empire's financial and infrastructural problems to the exclusion of everything else. This aspect was also frequently discussed in *The Journal of the Society of Arts* (1852–1908), a leading social sciences journal of those years.[28] In other words, before analysing the whole structure and conditions of a particular empire, they first exerted themselves to increase cotton production with a few modest steps but eventually moved from the consultant and supplier to a much more active role. For instance, actions that initially consisted of, by and large, sending and distributing foreign seeds evolved into participating in railway tenders and even attempts to establish model farms. Their plans, nonetheless, could not go beyond dealing with financial or infrastructural issues because they did not focus on what partnerships turned into at the actors' hands and what methods they used to make them fit together. In this context, without concentrating on "actors/objects in action," it becomes perplexing to comprehend the five primary motives of global historiography based on Sebastian Conrad: "technology, empire, economy, culture, and biology."[29] Delving into cotton cultivation only with economic factors gives rise to mistakes mostly made by foreign actors in cotton enterprises. The disclosure of complex relationships explains not only the phenomenon under study but also the local manifestations that follow the phenomenon. Therefore, in the thesis, the

[28] "Discussion," *The Journal of the Society of Arts* (22 December 1871): 101.
[29] Conrad, *What Is Global History?*, 101.

emergence of global cohesion, if any, will be analysed within the framework of technological change and cross-border interaction.

The problematic that constitutes the main scope of the thesis is the deficiencies in explaining the propulsive force behind the increase in cotton production of economic reductionist approaches, that is, the argument that the production pattern adheres to an utterly parallel course with foreign demand, which has been merged with cotton production in the Ottoman Empire mostly in the second half of the nineteenth century. An approach in which actors'/objects' manoeuvring capabilities are included in the narrative has not been attempted, and the possibilities of a narrative in which they exploit the vulnerabilities of the system and try to control their future have not been questioned. Everything has been seen as the history and sociology of the *finished*, but there has been no question of examining the *unfinished*. Nevertheless, socio-economic structures and phenomena are not only social configurations. These structures are neither fixed nor given. All practices involving structures and phenomena have therefore been produced and existed through the mobility of actors/objects. The changes that cotton underwent, in this context, were the product of actions, daily activities, and their modifications.[30] Within the

[30] Suppose the act of writing the history of the actors'/objects' mobility is considered as an *ontology of emergence*. In that case, it is distinguished that historical events are not just objects frozen in a specific time period. They can also be defined as *emergent entities*. Manuel DeLanda, one of the thinkers of speculative realism and new materialism, describes emergent entities as "assemblages." DeLanda establishes four criteria for something to be a real assemblage. While it may seem axiomatic, it is helpful to enumerate the premises for better understanding. The first criterion is that an emergent entity has emergent properties. That is, it has properties that its parts do not have. For example, the Dutch East India Company, as a whole, would be a case of an emergent entity because it has properties that are not possessed by individual ships, merchants, and so forth. The second criterion for an emergent entity is *downward causation*, which implies that an entity has retroactive effects on its parts. For instance, at the end of the American Civil War, the slavery practice of the South, which was presented as one of the reasons for the outbreak of the war, became an almost universally unethical practice—in fact, it was even possible to see its raising implications even at the beginning of the war. The third criterion is called *redundant causation*, which suggests that some parts of an emergent entity are redundant to the whole. For example, the Imperial Cotton Commission employees in Izmir were awarded medals. A monetary or land award could also be given instead. In addition, a change in parts does not mean that the whole has changed as well. In other words, changing the reward does not turn the act of giving the reward into another action. The last criterion is that an emergent entity can

boundaries of this problematic, it was asked how the cotton cultivation in the Ottoman Empire and the upsurge in cotton production followed a parallel course with foreign demand, whether the Ottoman Empire had a different experience in this story or had an experience articulated with global processes, and it was correspondingly asserted that the economic parameters were insufficient to delineate the cotton production process. It is, in fact, a complicated task to place the Ottoman Empire in any framework. When it comes to cotton production in this period, revolving around the history of science and technology rather than economic parameters as such and seeking the possibilities of the political economy of this story better explains the parameters of the slight increase in cotton production and why the expected growth did not actually occur—the nature of the sources shifting the story into a political-economic trajectory is just another matter. Because when reflecting on cotton cultivation in the Ottoman Empire, there is no homogeneous mass and behaviour. Notwithstanding that the discourse dimension of the issue has been discussed a lot,[31] the practical dimension, namely scientific and technological input,

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generate new parts. Returning to the example of the American Civil War, the Confederate Flag has produced a symbol for a few people in the United States today that denotes a "proud past" or "freedom of expression." In object-oriented ontology, emergence is the notion that there is a grouping of entities together such that they form larger compound entities. For a more comprehensive discussion, please see Young, "Object, Reduction, and Emergence," 89.

[31] The pioneering work on the discourse dimension of the subject is Berrak Burçak's doctoral dissertation titled *Science, A Remedy for All Ills: Healing 'The Sick Man of Europe': A Case for Ottoman Scientism* (2005). In her dissertation, Berrak Burçak attempts to use the concept of *scientism* as an umbrella term without unfairly attaching pejorative connotations to it. Even though the sources used by Burçak to conceptualise the theoretical background of scientism are considered problematic by many contemporary philosophers of science today, her dissertation is a cornerstone in terms of its central argumentation and handling of the late Ottoman literati in this context. One of the names who includes the concept of scientism in his Ottoman historiography is M. Şükrü Hanioğlu. A newspaper article titled "Din, Bilim, Bilimcilik" (2004) in the *Zaman*, an article titled "Blueprints for a Future Society: Late Ottoman Materialists on Science, Religion, and Art" (2005), and his books, *A Brief History of the Late Ottoman Empire* (2008) and *Atatürk: An Intellectual Biography* (2011) are the prominent works of Hanioğlu in which he devotes a place to scientism. Due to Hanioğlu's reduction of the concept of scientism to merely a pejorative term, ignoring the discussions in the current literature—especially the trends in the philosophy of science—and without giving any analytical definition of scientism, the multi-layered structure of the mind and identity worlds of the late Ottoman literati on science could not be adequately reflected. Some of the noteworthy studies on the subject are the doctoral dissertations of Serdar Poyraz's *Science versus Religion: The Influence of European Materialism on Turkish Thought, 1860–1960* (2010) and Ercüment Asil's *The Pursuit of the Modern*

has been largely neglected,[32] and it has been assumed that there is such a homogeneity. In addition, the database on which this interpretation is based has so far been unfruitful, far from systematic, and limited in representation. This thesis, which examines the aspect of science and technology that had an impact on cotton cultivation and production in the late Ottoman era, attempts to eliminate the incompatibility between the sophisticated framework of historiography and the rough database by contextualising the output and findings in the light of contemporary debates revolving around the history of science and technology and, in part, the philosophy of science and technology.

Mind: Popularization of Science, the Development of the Middle Classes, and Religious Transformation in the Ottoman Empire, 1860–1880 (2017), and M. Sait Özervarlı's article titled *Alternative Approaches to Modernization in the Late Ottoman Period: İzmirli İsmail Hakkı's Religious Thought Against Materialist Scientism* (2007). Last but not least, M. Alper Yalçınkaya's book, *Learned Patriots: Debating Science, State, and Society in the Nineteenth-Century Ottoman Empire* (2014), which, in a sense, puts a sociological retouch on the bibliographic trajectory of Burçak's dissertation, can be given as an example. He touches upon some of the epistemological problems of the concept of scientism and mentions that there is more than one type of scientism but prefers to exclude them altogether from his narrative. Nevertheless, in the contemporary literature on the philosophy of science and technology, although different types of scientism are acknowledged epistemologically, it is quite possible to identify one (or several) definitions and classifications of scientism on which most scholars agree. For more detailed studies on the concept of scientism from the latest philosophy of science literature, please see Pigliucci and Boudry, eds., *Science Unlimited? The Challenges of Scientism* (2017); Moti Mizrahi, ed., *For and Against Scientism: Science, Methodology, and the Future of Philosophy* (2022); and Bunge, "Scientism," in *Doing Science: In the Light of Philosophy* (2016).

[32] For a later and one of the rare studies on the subject focusing on the Syrian region, please see Williams, "Cultivating Empires: Environment, Expertise, and Scientific Agriculture in Late Ottoman and French Mandate Syria" (PhD diss., Georgetown University, 2015). Even though its focus is not directly on cotton cultivation, for an example that deals with whether there was regional capitalist development/commercialisation of agriculture through the group I define as "entrepreneurial actors" in the thesis, i.e. merchant families, please see Alff, "Levantine Joint-Stock Companies, Trans-Mediterranean Partnerships, and Nineteenth-Century Capitalist Development," (2018).

CHAPTER 2

THE MYTH OF LEAVING NO TRACES BEHIND

"In my opinion, the hallmark of the historian is that s/he is a dreamer. As s/he looks over many documents, s/he begins to imagine the realities to which these documents belong. The historian's is unlike any other fantasy."

— Carter V. Findley, Toplumsal Tarih, 1998[33]

2.1 The beginning of localisation of global trends in agronomy

For a historian who questions how the global trends in modern science and technology become localised, how the localised global shapes the local, how the concepts of global and local establish a symbiosis, how new collaborations and understandings are necessitated, and how all these relate to political economy, the most accurate commodity is cotton, as many scholars from different fields have argued. Cotton does not just characterise the nineteenth century or the Industrial Revolution. It also allows a narrative that makes sense of localised global developments and does not frame or fix the phenomena that come to life around these developments but makes their traces and effects able to be discovered. It is taken for granted that most people do not think of the Ottoman Empire when it comes to cotton cultivation in the nineteenth century. The prominent reason for this is that the story of Ottoman cotton cultivation and production is believed to have started with the American Civil War. Nevertheless, the argument that cotton cultivation did not leave a significant trace before the American Civil War is a *myth*.

[33] "Fikrimce, tarihçinin alâmet-i fârikası, hayalperest bir insan olmasıdır. Birçok vesikayı seyrederken, bu vesikaların ait olduğu gerçekleri hayal etmeye başlıyor. Tarihçininki başka herhangi bir fanteziye benzemez." Köker, "Tarihçinin Mutfağı—Carter V. Findley: Tarihçiliğin Diyalektiği," 31.

To unravel this myth, this chapter will address the debates revolving around cotton farming approximately between 1840 and 1860.

Turkey is an excellent case study in this area to construct the narrative mentioned above—in the scope of the thesis, the Ottoman Empire and Turkey are *generally* used in different contexts since the cotton enterprises of the actors in the centre of the Ottoman Empire (i.e., Turkey), which is meant to be the regions of western Anatolia and the south-eastern Balkans, are the essential subject matters. The Ottoman Empire, besides being an agricultural economy, had relatively suitable lands for growing cotton. However, the amount of cotton produced was small, and its type was in need of plant breeding. That is why there have been discussions about serious measures to be taken to grow, improve, and transplant cotton (and its seed), and new collaborations have been established in this direction.

Ranging from the initiatives and experiences of the government, local and foreign actors to the machines involved in the cotton cultivation process along with pamphlets and treatises, different dynamics shed light on how new technologies and global trends in science were localised in the region. In addition, these experiences account for how the localised global shaped the local itself. What is more, how global and local concepts initiate a symbiosis is apprehended by means of them. New collaborations and understandings find their way into these experiences. The way to understand how the localised global necessitates new partnerships and insights is through closer examination of these actors and objects. The resulting dynamic environment reveals the relationship of all these variables with political economy. Despite all these, the story of cotton in nineteenth-century Turkey, regardless of the timeline, has been read and written only through the personal activities of the actors/experts sent to Turkey, the increasing foreign demand shaping the market

conditions, and the publications made mostly in the Ottoman press. Integration processes and forms have often been tied to a single cause. Whereas, at times and places where trade relations play a critical role, there have been moments when global processes and integrations have been accelerated by technological change.[34] In other words, manoeuvrability junctures missed or grabbed remained uncharted territories of historiography.

In the story of Ottoman cotton cultivation after the 1840s, it is noticed that the economic, political, and cultural dimensions are inseparable. For example, the market's diversion into new territories was not a self-managed process. Multiple actors, such as bureaucrats at various levels, scientists, experts, traders, intermediaries, and farmers, played a role in this process. Whoever thinks what s/he has written is in the palm of their hand is mistaken. Everything as light as cotton evaporates. Therefore, the path of a narrative based on any commodity will pass not only through fields but also through parliaments, laboratories—albeit barren or almost non-existent, at least in the case of cotton cultivation in the Ottoman Empire—marketplaces, and the like. Political interventions and the so-called cultural or rather regional preferences will take place in the narrative. Thus, a historian who studies commodities that are not free from global processes is aware that these processes do not always follow a specific chronology and network. All of them are shaped by the authenticity and ingenuity of actors and agents. The meaningful thing is, then, to be able to ask questions that can compete with the authenticity and ingenuity of these agents and to fathom how they express themselves.

The cadres, who would implement the mechanisms that would ensure the establishment of agriculture according to modern methods, were mainly appointed

[34] Conrad, *What Is Global History?*, 108.

during the Tanẓīmāt period. In 1838, just a year before the proclamation of the *Gülḫāne Ḫaṭṭ-ı Hümāyūnu* (referring to the Imperial Edict of Reorganisation or Reforms, alias the *Tanẓīmāt Fermānı*), an Agriculture and Industry Council was established under the *Ḫāriciyye Neẓāreti* (Ministry of Foreign Affairs).[35] The council seemed to insinuate at the outset that agriculture was not seen as separate from industry and vice versa. Despite this, whether to give priority to agriculture or industry would continue to occupy Turkey's economic agenda until the first years of the Republic. In an article published in the issue of the *Cerīde-i Ḥavādiṣ* (Journal/Chronicle of News/Events) dated 21 Receb 1256 [18 September 1840], it is mentioned that it will be beneficial for the country to produce essential products, such as cloth, broadcloth, glass, and sugar, brought from abroad, within the borders of the empire.[36] According to the article, which reflects the political economy of the period, it is meaningless for a country to try to produce every commodity on its own; instead, it should be interested in a craft that it is good at and produce in that area (of specialisation) and import other commodities it needs with what it earns from there: "Aṣıl tedbīr, kişi meʾlūf oldığı ṣanʿatı ne külliyyen terk ve ne yeñi bir iş īcādından iḥtirāz itmelidir." [The main precaution is that one should neither completely

[35] The name of the organisation was later changed to the *Meclis-i Umūr-ı Nāfiʿa* (Board/Council of Public Works). In 1839, it was attached to this ministry upon the establishment of an independent *Ticāret Neẓāreti* (Ministry of Commerce) in order to work on the development of agriculture, industry, and trade. Güran, "Zirai Politika ve Ziraatte Gelişmeler," 219.

[36] *Cerīde-i Ḥavādiṣ*, no. 6, 21 Receb 1256/18 September 1840, 2. The newspaper is owned by a British citizen, William Churchill. Churchill not only shared the events that took place in Istanbul and the empire but also the ideas of the British business world with his readers. According to Churchill, the Ottomans should have focused primarily on the export of raw materials in commercial life. As maintained by Şerif Mardin, this approach represented the view of the British industrial class. The reason behind this outlook was that the Ottomans turned to British goods with the income they would acquire from the export of grain, and the money from Britain returned to Britain again. For this reason, Churchill was one of the harshest critics when Ahmed Fethi Pasha defended the industrialisation of the Ottoman Empire. Mardin, "Tanzimat'tan Cumhuriyet'e İktisadî Düşüncenin Gelişmesi," 622. Thus, in the newspaper circle, which was also a sensory actor, one of the transmitter actors (William Churchill) had a discussion with another sensory actor (Ahmed Fethi Pasha) about the knowledge in the synthesis and production process.

abandon the craft they are accustomed to nor avoid inventing a new job.][37] When it is reminded that these ideas defended in the *Cerīde-i Ḥavādiṣ* will also be pronounced by people like Mehmed Câvid Bey[38] much later, and they have been particularly popular among the literates, who have advocated more liberal economic policies in the Ottoman Empire, the political economy proposed by the *Cerīde-i Ḥavādiṣ* rather evokes the ideas circulating in the British Isles. Therefore, it is usual for the article to draw attention to the products that Turkey has been growing and exporting for centuries, such as cotton, dried fruits, nuts, and silk, and encourage its readers about the agriculture of these products. In the article, it is believed that the "necessary progress" will be achieved in the industry with the income generated from agriculture as well.[39]

The subject of another article published in the issue of the *Cerīde-i Ḥavādiṣ* dated 1 Ẕi'l-ḳaʿde 1256 [25 December 1840] is the promotion of cotton agriculture in Turkey. In the article, which talks about the amount of cotton exported from the United States to Europe, the demand for cotton is presented with the following sentences to provide incentives: "Hele pamuk ticāreti-çün Avrupa bir çārşūdır ki her ne-ḳadar gönderilür ise satılur." [Especially for the cotton trade, Europe is such a market that no matter how much is sent, it is sold.][40] The *Cerīde-i Ḥavādiṣ* continued its publications uninterruptedly, stating that the Ottomans should turn to global technology trends for the development and spread of agriculture. An article published in the newspaper comprehensibly states that productive agriculture cannot

[37] *Cerīde-i Ḥavādiṣ*, no. 6, 21 Receb 1256/18 September 1840, 3.
[38] The political life of Mehmed Câvid Bey started in 1908 and continued intensely until the Great War. Câvid Bey was one of the most prominent finance ministers (*māliyye nāẓırları*) and personæ of the period, and, through the eyes of some foreigners, the only person who grasped (modern) accounting in Turkey. He believed that the principal economic future of the country would be based on agriculture. Pirili, "Mehmet Cavit Bey," 141.
[39] *Cerīde-i Ḥavādiṣ*, no. 6, 21 Receb 1256/18 September 1840, 3.
[40] *Cerīde-i Ḥavādiṣ*, no. 16, 1 Ẕi'l-ḳaʿde 1256/25 December 1840, 3.

be done without the advent of new agricultural tools and equipment.[41] In this article, the success of Europeans in the field of agriculture is attributed to their proper utilisation of technology and to some scientific applications. Translated articles from the foreign press may have been published to show that the use of new technologies in agriculture were also recommended by the Europeans. One possible reason, among others, for preferring translated publications was that there were not perfectly sufficient works written in this field in the Ottoman Empire.

In another issue of the *Cerīde-i Ḥavādiṯ* dated 18 Ṣafer 1257 [11 April 1841], a translation of an anecdote written in English is published.[42] This translation states that the people engaged in agriculture should keep some of the products they produce to themselves, sell their product at the current price (*revāc*/*rāʾic*), be satisfied with it, and have sufficient capital for agriculture. The article, which is relevant in terms of highlighting the importance of the agricultural sector to be able to make a living on its own, says that if this segment has a certain wealth, they can pay their taxes and increase their capital to purchase the tools and equipment they need. Another fundamental aspect of the article is that it points to agriculture as a prerequisite for industry and trade. Based on the article, a robust agricultural sector is needed for both factories to function and to sustain commercial life. A second issue articulated in this period when the necessity of agriculture started to be discussed was how agriculture should be properly practised. Notable publications on this concern also

[41] ". . . zirāʿate lāzım gelen tarla ve ḥayvān ve çift takımı ve toḫum ve ādem lüzūmı kadar mevcūd olmadıkca ekilecek maḥall ne-ḳadar aʿlā olur ise de yine ekilemez. Bundan başka maṣlaḥatınıñ kolaylığını mūcib olur. Yeñi īcād olunmuş bir ālāt var ise anı [onu] almadıkca ve vaḳtiyle her ne ise lāzım olan işini görmedikce gereği gibi zirāʿat idemez . . . ." [. . . unless the field, team of two animals (with their harness), seeds, and labour required for agriculture are available as much as necessary, [it] cannot be grown no matter how good the field is to be planted. Other than that, it requires ease of work. If there is a newly invented tool/machinery, cultivation cannot be done properly without it being purchased and done whatever is needed . . . .] *Cerīde-i Ḥavādiṯ*, no. 23, 5 Muḥarrem 1257/27 February 1841, 1.

[42] *Cerīde-i Ḥavādiṯ*, no. 29, 18 Ṣafer 1257/11 April 1841, 2–3.

find their place in the *Cerīde-i Ḥavādiṯ*. As maintained by the article in the issue of 12 Rebīʿü'l-evvel 1258 [23 April 1842], for agriculture: (i) finding suitable soil conditions and, if necessary, improving the soil and making it more fertile for the crop to be planted, (ii) clean and fresh seeds, (iii) good tools and equipment, (iv) four healthy oxen, (v) workers as much as the work to be done, (vi) animal husbandry if the place is proper and protecting these animals, (vii) the cultivation of specific (or cash) crops with commercial value, such as cotton and silk, and (viii) knowledgeable attendants and servants are all needed to sustain the farm.[43]

The event that Tevfik Güran regarded as one of the most significant developments with respect to the agricultural bureaucracy of the empire was the *Meclis-i Zirāʿat* (Council of Agriculture), which was first established under the *Māliyye Neẓāreti* (Ministry of Finance) in 1843 and later attached to the *Ticāret Neẓāreti* (Ministry of Commerce).[44] The primary duties of this council were to articulate suggestions by making investigations and research on issues, such as raising agricultural production, ensuring the balance of foreign trade, and increasing the income as well as welfare level of the people.[45] Members of the Zirāʿat Meclisi have worked within the scope of these essential duties. For example, Hayrullah Efendi, who was originally a physician and was appointed to the Zirāʿat Meclisi in 1847, made translations for modern agricultural methods, such as *Fenn-i Zirāʿatdan*

[43] *Cerīde-i Ḥavādiṯ*, no. 83, 12 Rebīʿü'l-evvel 1258/23 April 1842, 2. The importance of the points drawn here for cotton agriculture will be seen in the following sections.
[44] Güran, *19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar*, 45–46; and Güran, "Zirai Politika ve Ziraatte Gelişmeler," 219–20. Güran's narrative, which focuses primarily on institutions, is one of the classical narratives that underline the significance of structural reforms. The descriptions in Ottoman agricultural history, by and large, support Güran's narratives and complement his minor deficiencies. Therefore, in the thesis, while drawing the general lines of the nineteenth-century Ottoman agrarian past, the works of Güran were generally used.
[45] Ibid.

Beyt-i Dihḳānī (1847/1848)[46] from *Maison rustique du XIX^e siècle* (1835–1845).[47] In 1850, a pamphlet prepared by Evangelibos (or Avangelibos) of Izmir on agriculture and trade was licensed and helped to be published as well.[48]

Furthermore, agricultural loans, albeit limited, were provided to the farmers. This was the reason why the *Nāfiʿa Ḫazīnesi* (Public Works Treasury) was established, and between 1843 and 1846, approximately 12.6 million piastres (*ḳurūş*/*ġurūş*) credit was distributed to the farmers. The money collected from the loans was used for specific demands, such as road construction and bridge repair, again in line with the farmer's requests. Even though it was insufficient to meet the needs of all farmers in the empire, starting from the budget of the 1847–1848 fiscal year, the *Nāfiʿa Meṣārifi* (Public Works Spending/Expenses) arrangement began to take place in the budgets, and the *evrāḳ-ı ṣahīḥa vāridātı*[49] was allocated to this order.[50] All this effort can be considered as a manifestation of the desire to gain dynamism. The most sincere and concrete step of this desire, especially concerning cotton, was taken between 1847 and 1851 within the borders of today's Yeşilköy.

2.2 An experiment in San Stefano, 1847–1851

To observe the accelerated agricultural transformation all over the world in the mid-1800s, the first place to be visited in the thesis is the Zirāʿat Taʿlīm-ḫānesi (*cf.*

[46] Hayrullah Efendi, *Fenn-i Zirāʿatdan Beyt-i Dihḳānī*, vol. I (1264 [1847/1848]). This two-volume book was printed in the *Ṭabʿ-ḫāne-i ʿĀmire* (Imperial Printing House) and sent to the provinces and sanjaks to be sold in various copies. BOA, C.MF 29/1421, 23 Muḥarrem 1265/19 December 1848. In another document, it was stated that the printing, distribution, and all other expenses of this translated work were covered by the treasury. BOA, A.}MKT 238/63, 29 Ẕi'l-ḥicce 1265/15 November 1849.
[47] Bailly de Merlieux, ed., *Maison rustique du XIX^e siècle*, vol. I (1835); and Ysabeau and Bixio, eds., *Maison rustique du XIX^e siècle*, vol. V (1845).
[48] BOA, A.}AMD 23/73, 29 Ẕi'l-ḥicce 1266/5 November 1850.
[49] Güran, "Zirai Politika ve Ziraatte Gelişmeler," 220. *Evrāḳ-ı ṣahīḥa* (valid/authentic document[s]) was a cold stamped paper(s) issued for use in documents in order to provide additional income (*vāridāt*) for the state during the Tanẓīmāt period—it was used until the stamp (the gummed marginal paper) was issued in 1873.
[50] Ibid.

footnote 15) to be established in San Stefano (Ayamama)[51] and the agricultural complex formed by the model farm attached to it. This facility was one of the most appropriate places to start exploring the reflections of an era in which scientific developments, new production techniques, and mechanisation, became widespread, and agricultural relations of production began to take new forms. In addition, various hopes, failures, and meanderings have existed in this place at the same time. The commercialisation of agriculture, the increase in the income obtained from the land, the Zirāʿat Taʿlīm-ẖānesi, which entered the scene at a time when the benefits of agricultural investments for the Ottoman Empire were discussed, and the belief that it would be the pioneer of modern farming methods were all related to the equation that cotton would enter for the Ottomans during the years of the American Civil War.

In the context of industrialisation and the development of modern agricultural methods along with agronomy, the members of the Dadian family were also on the stage as significant actors of the period. Western European entrepreneurs did not spread the experience of industrialisation of Europe[52] in San Stefano thanks to them; on the contrary, the Dadians realised their own projects with what they learnt in Europe.[53] Foreign actors were not always in the role of direct intermediaries in the Ottoman Empire, beyond having modern science and technology in these early years. In other words, Western European states had the experience, knowledge, and

[51] The name of the Ayamama farm, which was located in the Ayastefanos (today's Yeşilköy) region and belonged to the personal treasury of Sultan Mehmed Reşad, was changed to *Mecīdiyye* in 1915, in honour of Sultan Abdülmecid. It is sometimes referred to as "Ayapapa" in archival documents. BOA, MB.İ 183/11, 13 Şevvāl 1333/4 September 1915.

[52] A conscious example of "Europe-centredness" has been demonstrated here. This should not be confused with "Eurocentrism." Sebastian Conrad makes the distinction as follows: "To say that industrialisation happened in England first is not Eurocentric; to assume that it could only have happened only there is." Conrad, *What Is Global History?*, 167.

[53] Edward C. Clark asserted that Barutçubaşı Ohannes Dadian, being an Ottoman subject in the 1840s, was the most experienced actor in industrial management. Clark, "The Ottoman Industrial Revolution," 70. Apart from the Dadians, there were also private enterprises whose individual efforts helped develop the industry. For example, Osekhi, who made a living by producing raw as well as spun cotton from the Dutch genus *Gossypium*, was given a licence with the thought that it would help the development of the industry. BOA, A.}MKT 90/50, 6 Şaʿbān 1263/20 July 1847.

technology necessary for the establishment of an industrial enterprise. Still, they were not in all cases the spark and executive of the industrial enterprise in the Ottoman lands. An industrial complex defined by Edward C. Clark as "a Turkish Manchester and Leeds, a Turkish Birmingham and Sheffield" on the Bakırköy, Yeşilköy, Küçükçekmece, and Yedikule line was a project in which the Dadians took an active role.[54] The Dadians appear in this period as both *entrepreneurial* and *transmitter* actors. They were not only the muscles that provided movement in the industrial complex but also the producers and carriers of knowledge, that is, actors who introduced and galvanised other entrepreneurs. The foundations of bureaucratic organs to implement these policies were laid long before the industrial and agricultural movement, but institutions were not organisms that acted alone; they always needed actors like the Dadians. In this respect, the relationship between the Dadians and sensory actors will find its place in the narrative as one of the factors shaping the project's fate.

New technology products, machinery, and looms required for the establishment of factories would be brought from abroad, and new actors from Europe were needed for the establishment, operation, and maintenance of these machines. Thus, the network of relationships of the Dadians expanded from businessmen to engineers, from engineers to masters, and from masters to workers. Initially, these new actors consisted of the British, but later technical staff were recruited from the United States, Belgium, France, Italy, and Austria as well.[55] Besides the Dadians, other local actors similar to them also became a part of the

[54] MacFarlane, *Turkey and Its Destiny*, 1:58; and Clark, "The Ottoman Industrial Revolution," 68. Factories in this region were supported by several subsidies. The most noteworthy of these supports was the purchase of the production of these factories by the state. Güran, "Tanzimat Döneminde Devlet Fabrikaları," 238.
[55] Önsoy, *Tanzimat Dönemi Osmanlı Sanayii ve Sanayileşme Politikası*, 54.

intellectual pillar of the industrial movement. Mustafa Efendi, a Hungarian *mühtedī* (convert), sent the petition he prepared about a "consumable and industrial school" to the Ministry of Commerce to be opened in the industrial zone.[56] The need for such a school was typical because foreign employees were paid more money, and problems were experienced more often with these foreign employees. It was not a sustainable form of employment. There was a need to transform Ottoman subjects to qualified workers. The way to do this was to train the workers needed.[57] Despite this need, the school project, which would cover many branches of industry from physics to chemistry, from chemistry to machinery and mining, could not see the light of day due to inadequate state capacity. Among the school projects of this period, the Zirāʿat Taʿlīm-ẖānesi was the only one that could be realised.

One of the names, perhaps the most notable, chosen for the experimental (or model) farming project in Istanbul was a respected and experienced farmer (rather a "rancher" because he was also engaged in animal breeding) from South Carolina named Dr James Bolton Davis.[58] The other name was Dr John Lawrence Smith, a young gentleman who specialised in agricultural chemistry with his education in

[56] BOA, A.}MKT.MHM 23/43, 25 Ramażān 1266/4 August 1850.

[57] For example, due to the lack of an educational institution, four students were sent for internships in different factories in Europe so that they could work at the Hereke Factory. Students would thus learn the operation and technical knowledge of these factories and be employed as experienced and well-informed workers when they return. It was not preferred for students to learn the job at the Hereke Factory, which has not yet fully settled, as it would slow things down. In addition, there was a language barrier between foreign workers there and workers from Ottoman subjects. Therefore, where no educational institution focused on this type of technical training, the most reasonable solution was to send students abroad. BOA, HH.d 67, 11 Ṣevvāl 1265/30 August 1849.

[58] For the expert to be brought from the United States, President James Knox Polk was contacted through a dragoman (interpreter) John Brown, the US Istanbul Ambassador Dabney Smith Carr and Secretary of State James Buchanan. Allen, *et al*., "The Cashmere Shall Goat," *The American Cotton Planter* (September 1856): 271; *Cerīde-i Ḥavādiṯ*, no. 304, 3 Ẕi'l-ḳaʿde 1262/23 October 1846, 1; and Daniel, "American Influences in the Near East before 1861," 75. Buchanan wrote a letter to Franklin H. Elmore of South Carolina to identify two people: "I feel under great obligations to you for your kindness in undertaking to procure for me the services of suitable persons to improve [and] extend the cultivation of [c]otton in the dominions of the Sultan of Turkey." Moore, ed., *The Works of James Buchanan* (1909), 7:21. Ultimately, James Bolton Davis and John Lawrence Smith were appointed. Moore, ed., *The Works of James Buchanan* (1909), 7:63.

Germany and gained fame in this field.[59] These two Southerners found their place in the newspaper columns before they boarded the SS *Great Western* to go to Istanbul.[60] Newspapers overlooked the detail that the ship first stopped in Izmir, and then Davis and his entourage departed from there to Istanbul.[61] The passengers, who set off in September, arrived in *Dersaʿādet* in November and appeared before Sultan Abdülmecid at 8 o'clock on Monday, 6 November 1846.[62] The first impression of Davis, who attended the banquet of the Grand Vizier, Mustafa Reşid Pasha, on the order of the Sultan, was that the government seemed sincere in this project.[63] Davis's meeting with Barutçubaşı Ohannes Dadian was about the course of the project. The

[59] John Lawrence Smith is a character who can offer a different perspective on discussions about *authentic science* in the Ottoman Empire through mineralogy. During his time in the empire, he was not only interested in agriculture. He demonstrated the use of the first electric telegraph to Sultan Abdülmecid, studied the mines in the Ottoman lands, discovered two new minerals near Edirne, and named one of these minerals "Medjidite" in honour of the Sultan. Moreover, he conducted studies on thermal water resources in western Anatolia, which had never been explored before. Michel, *In Memoriam: J. Lawrence Smith, M. D.* (1884), 7. What makes Smith's life more interesting was that he was not at all satisfied with his experience in Turkey. Notwithstanding that he had done some scientific studies, he was disturbed by the fact that his every move was being watched by the Ottoman government and felt like a bird in a cage. He often states that he is tired of the ignorance and stupidity of the people around him. To get more details about his life, please see Silliman, *Sketch of the Life and Scientific Work of Dr. John Lawrence Smith* (1884), 8.

[60] "Cultivation of Cotton in Turkey," *The Leicester Chronicle*, 12 September 1846, 1; and "Culture of Cotton in Turkey," *The Blackburn Standard*, 9 September 1846, 1. Contrary to the news, Buchanan stated in his letter that the two of them could not go at the same time, and that Smith could only get on the ship on 16 September 1846. Therefore, the information is not certain. Moore, ed., *The Works of James Buchanan* (1909), 7:63. Dr Davis also brought his family and brother with him. His brother, Nathan H. Davis, also helped Dr Davis at the Zirāʿat Taʿlīm-ẖānesi and received a salary of 1,500 piastres for his service. BOA, D.DRB.MH 990/5, 9 Şaʿbān 1264/11 July 1848; and Strobhart [State Reporter], *Reports of Cases in Equity, Argued and Determined in the Court of Appeals of South Carolina, at Charleston, January Term, 1859 and at Columbia, May Term, 1850*, 134. Unlike Nathan, less is known about his wife, Mary Elizabeth Scott, as she does not have an ego-document. There is no information in the records other than that "she was the most beautiful woman in the region." Bolick, *A Fairfield Sketchbook*, 250.

[61] BOA, A.}MKT 148/51, 16 Şevvāl 1264/15 September 1848.

[62] ". . . resīde-i dest-i iʿzāz olan işbu teẕkire-i sāmiyye-i āṣaf-āneleri manẓūr-ı meʿālī-neşūr-ı ḥażret-i şāhāne buyurulmuş ve müşārün-ileyh nāẓır efendi ḥażretleri ber-muʿtād ḥāẓır bulunmak üzere elçi-i mūmā-ileyhiñ ẕikr olunan pamukçılar ile ber-ā-ber işbu Pazartesi güni sāʿat sekiz ḳarārlarında Mā-beyn-i Hümāyūn cānib-i eşrefine ʿazīmetleri müteʿalliḳ ve şeref-ṣudūr buyurulan irāde-i seniyye-i mülūk-āne īcāb-ı ʿāliyyesinden bulunmuş olmağla ol-bābda emr ü fermān ḥażret-i veliyyü'l-emriñdir . . ." [. . . with the said minister and the aforementioned envoy, together with the cotton experts mentioned, to be present, as is customary, at the *Mā-beyn-i Hümāyūn* (the flat/office in the palace where the Sultan performs government affairs and receives deputies and envoys) this Monday around eight o'clock . . . .] BOA, İ.HR 37/1728, 15 Ẕi'l-ḳaʿde 1262/4 November 1846. The first person Dr James Bolton Davis met in Istanbul was Barutçubaşı Ohannes Dadian. BOA, A.}MKT 148/51, 16 Şevvāl 1264/15 September 1848.

[63] MacFarlane, *Kismet*, 326.

negotiations between Davis and Barutçubaşı Ohannes Dadian were turned into a *lāyiḥa* (detailed report; annotated writings, usually given to higher authorities, expressing opinions and thoughts on a particular issue). The project, which Hüsnü Efendi, *Fabrika-i Hümāyūnlar Nāẓırı* (Minister of Imperial Factories), described as "mi<u>s</u>li nā-mesbūḳ bir e<u>s</u>er-i celīl" or an unprecedented illustrious work if implemented, was presented to the Grand Vizier at the end of 1846.[64] After these meetings, Davis was taken to the model farm, which was in the process of being established, namely the Zirāʿat Taʿlīm-ḫānesi.[65] According to the contract made with him, Davis entered the service of the Ottoman state for the first two years, provided that he had full authority.[66] Agriculture (*zirāʿat*) and farming (*ḥarā<u>s</u>et*) would be taught with new methods (*uṣūl-i cedīde*) to students brought from the provinces, and it was planned that these students would teach and get them to comprehend agricultural techniques in accordance with modern methods to those who were engaged in agricultural activities in their homeland.[67] In the school to be established,

[64] In line with the detailed report presented, ". . . maḥṣūlāt-ı maṭlūbeniñ uṣūl-i zerʿ ve terbiyesiniñ yoluyle şākirdān ve ʿameleye öğredilmesi . . . ," [. . . teaching the demanded crops to students and labourers through the method of planting (seeds) and cultivation . . . ,] theory and practice were supposed to coexist with each other. In other words, it was not possible to realise modern agriculture unless acquired theoretical knowledge was transferred to practice. For this reason, it was understood that for the implementation of the Zirāʿat Taʿlīm-ḫānesi project, the missing requirements, such as finding suitable land, arranging this land in accordance with the project, student and worker stock, technical tools, and administrative reports should be completed as soon as possible. With such a strategy, not only the transfer of modern production technologies but also the training of people who would ensure sustainability would come with it. These people, in a sense, would act as envoys or representatives of the government's project. BOA, İ.MSM 24/639, 24 Muḥarrem 1263/12 January 1847.

[65] After meeting with Davis, Barutçubaşı Ohannes presented a report to government officials containing his comments about Davis. In this report, Ohannes states that Davis, whom he defines as "*üstād-ı kāmil*," [grand master,] is not only an expert in cotton agriculture, but also in the agriculture of other cultivated plants, and that he is well-versed in the intricacies of animal breeding. BOA, HH.d 65 [102-a], 21 Ẕi'l-ḳaʿde 1264/19 October 1848; and BOA, İ.MSM 24/639, 24 Muḥarrem 1263/12 January 1847. The decision to open the Zirāʿat Taʿlīm-ḫānesi was published in the issue of the *Taḳvīm-i Veḳāyiʿ* (Calendar of Events) dated 6 Ṣafer 1263 [24 January 1847]. Ergin, *Türkiye Maarif Tarihi*, 2:29.

[66] BOA, A.}MKT 148/51, 16 Şevvāl 1264/15 September 1848.

[67] Contrary to what was planned, the fact that most of the students came from Istanbul created a situation contrary to the founding purpose of the Zirāʿat Taʿlīm-ḫānesi. BOA, İ.DH 241/14635, 16 Ẕi'l-ḥicce 1267/12 October 1851; and "L'année 1847," *Journal de Constantinople*, no. 65, 1 January 1848, 1.

students who would be brought specifically from cotton-producing regions of the empire would receive education in the fields of the natural sciences and agricultural practice. Based on a report published in the *Journal de Constantinople* (1846–1866), there were 46 students at the Taʿlīm-ḫāne in San Stefano as of 1849. It was expressed that half of these students were Muslims and the other half consisted of different groups of the empire.[68] Education was given in Turkish and French, and the syllabus was as follows: (i) practical and theoretical agriculture (*l'agriculture pratique et théorique*), (ii) botany (*la botanique*), (iii) the veterinary art (*l'art vétérinaire*), (iv) the improvement of woolly animals and particularly merino sheep (*l'amélioration des bêtes à laine et particulièrement des moulons mérinos*), (v) arithmetic (*l'arithmétique*), and (vi) geometry (*la géométrie*).[69] K. Agathon, M. E. Carenza, and M. K. Istimaradjan were some of the instructors working at the Taʿlīm-ḫāne. Agathon lectured in both general agriculture and veterinary medicine, apart from being the director of the Taʿlīm-ḫāne (at that time). Carenza gave lessons in mathematics, and Istimaradjan taught botany and agricultural practices. At the end of each semester, students were subjected to a written exam under the supervision of these instructors.[70]

The articles in the *Journal de Constantinople* published in 1848 complain that agricultural science (*la science agricole*) has achieved great success in Europe and

[68] In another report, it is said that 23 of these students are Muslim, and 23 are Christian. From this, it is perceived that there are no Jewish students in the Taʿlīm-ḫāne. "Intérieur. Constantinople," *Journal de Constantinople*, no. 207, 29 December 1849, 1.
[69] "Intérieur. Constantinople. Agriculture. Et examens à l'Institut Agricole de San-Stefano," *Journal de Constantinople*, no. 177, 29 July 1849, 1.
[70] At the end of the news, tacitly and politely, the Sultan is invited to the Taʿlīm-ḫāne for next year's exams: "Qui sait si, l'an prochain, le Souverain de l'empire, qui aime tant à encourager tous les établissements qui doivent contribuer au bien-être du pays, n'assistera pas aux examens agricoles pour mieux stimuler l'ardeur des professeurs et des élèves!" [Who knows if, the next year, the sovereign of the empire, who likes so much to encourage all the establishments which must contribute to the well-being of the country, will not attend the agricultural examinations to better stimulate the ardour of the teachers and students!] "Intérieur. Constantinople. Agriculture. Et examens à l'Institut Agricole de San-Stefano," *Journal de Constantinople*, no. 177, 29 July 1849, 1.

has not stepped into the Ottoman Empire despite its development.[71] As maintained by the newspaper, model farms should be disseminated so that the current routine would be replaced by science. The article underlines the urgent need for new methods of science to be considered.[72] There was a kind of agronomic eulogy that could not be found even in the publications of the CSA, which intensified its activities after 1860. Unlike the Zirāʿat Taʿlīm-ḫānesi, the suggestion of the *Journal de Constantinople* was that the soldiers should be trained in these model farms and contribute to the army's budget by performing farming alongside the military profession. This peculiar idea of agrarian soldiers was not implemented.[73]

In spite of the fact that Dr Davis had chosen a plot of land near San Stefano, 9 miles (approx. 14.5 kilometres)[74] from Istanbul, for a model farm by examining the weather tables kept by the missionary Revd Mr Dwight as well as the characters and capacities of those who would work on the project, the main reason why this place was chosen for the model farm was its proximity to the Sultan's cotton factory.[75] Another reason was its contiguity to the factories again, but this time to the factories

[71] "La science agricole a fait les plus grands progrès en Europe; mais, il faut bien le dire, elle n'a nullement pénétré dans l'Empire." [Agricultural science has made the greatest progress in Europe; but, it must be said, it has by no means penetrated into the empire.] "De l'emploi de la cavalerie dans les fermes-modèles à créer en Turquie," *Journal de Constantinople*, no. 67, 11 January 1848, 1.
[72] "Au nombre des moyens qui peuvent faciliter les développements de cette industrie-mère, il faut compter, sans doute, les nouveaux procédés de la science . . . ." [Among the means which can facilitate the development of this parent industry, we must doubtless count the new processes of science . . . .] "Intérieur. Constantinople," *Journal de Constantinople*, no. 113, 4 September 1848, 1.
[73] ". . . la création des fermes-modèles combinées avec le concours de la cavalerie . . . ." [. . . the creation of model farms combined with the assistance of the cavalry . . . .] "L'un pour l'autre," *Journal de Constantinople*, no. 67, 11 January 1848, 2. For another discussion of agrarian military colonisation, please see "Utilité de colonies militaires en Turquie," *Journal de Constantinople*, no. 114, 9 September 1848, 1.
[74] Ubicini, *Letters on Turkey*, 324. Ubicini also claims that the training here is both theoretical and practical, based on French model farms. This was not unanticipated, considering that students were sent to France for agricultural education during the reigns of Mahmud II and Abdülmecid.
[75] "Cotton Cultivation in Turkey," *The Sunbury Gazette*, 23 October 1847, 2. The earliest press coverage of Dr Davis, as far as can be detected, appeared in *The Preston Chronicle and Lancashire Advertiser*. In the news, it was said that studies in cotton culture would be carried out with several types of cotton seeds to be brought from the United States. "Cotton in Turkey," *The Preston Chronicle and Lancashire Advertiser*, 24 December 1846, 7. Charles MacFarlane reports that the area is a "swampy hollow" and unsuitable for agriculture. MacFarlane, *Kismet*, 322.

where the Dadians were responsible for their management. Dr Davis was aware that the area was not the most ideal for cotton farming, but he thought that cotton farming there was not impossible. So, whatever the root cause, Dr Davis must have seen it as a challenge that could be overcome. The promises made to him and the fact that the government had set up the project close to the Zeytinburnu industrial complex must have fed Davis's self-confidence. The biggest challenge Dr Davis could imagine would not be the location of the Zirāʿat Taʿlīm-ẖānesi. Its location would perhaps appear as a factor that would rank in the last place among the other problems. The capital was the biggest challenge in Ottoman agriculture in a broad sense.

A reporter who allegedly spoke frequently with Dr Davis reported to *The Daily National Whig* that Dr Davis described the cotton cultivation in the country as follows: "The only plough used in Turkey is a log, elevated at one end on two wooden wheels, and a large iron at the lower extremity, and the shovel sometimes, indeed mostly, wooden."[76] In the opinion of Davis, cotton is pulled in this way, and its pods or bolls (*ḳoza*s/*ġūze*s) are cleaned with a tool, such as a two-stringed spring, but this cotton is not sold and used for any purpose other than candle wicks.[77] Considering the fact that Istanbul was not once a cotton-growing centre throughout its history, and when the climate of the northern Marmara open to terrestrial influences was compared to the climate of the Aegean and Çukurova regions, which were more suitable for cotton cultivation, it was not surprising that the cotton grown

[76] "From Constantinople," *The Daily National Whig*, 18 October 1847, 2. Davis's mention of the plough here is relevant in terms of agriculture and technology discussions. The Anatolian peasants call the plough that Davis tries to describe as "*kara saban*/*karasaban*" (primitive plough). On the other hand, the plough, which was used more frequently in Europe at that time, was called "*pulluk*" (heavy German plough or *Pflug*). The main difference between them is that the kara saban could go to a depth of 10 centimetres, while the pulluk could go down to a depth of 20-25 centimetres. A peasant using a kara saban could cultivate three acres of land, and a peasant using a pulluk could cultivate 12 acres of land in one working day. In addition to this, it was necessary to plough the same land three to four times with the kara saban in order for the quality of the ploughed soil to be of the same quality as the pulluk. Güran, *19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar*, 85.
[77] "From Constantinople," *The Daily National Whig*, 18 October 1847, 2.

here was of a quality that could only be used for candle wicks. It was also declared in this newspaper article that the soil was not suitable for cotton farming.[78] The cotton grown in the Taʿlīm-ḫāne would not be of the same quality as cotton grown in South Carolina, though it would be put on display at the Great Exhibition of 1851 in London.[79] Yet, as stated earlier, Dr Davis did not think so. More accurate from Davis's perspective was that the soil was not the most ideal. Because compared to the variety in South Carolina, no local cotton grown in the world at that time was of the same quality. Even though Davis did not know that everything would work against him while undertaking this task, he must have thought that he would benefit from the advantages of realising such a project on a plot of land close to the palace.

Besides issues such as land as natural actors, the actors that should also be mentioned in the project were the students expected to operate as some of the sensory actors in the coming years. Although it was reported in a newspaper article that five of the students were Turkish, four were Armenian, and one was Greek, it was articulated in other sources that there were no Greek students.[80] It might be thought that the newspaper did not have a good grasp of the structure and functioning of the Zirāʿat Taʿlīm-ḫānesi, since it did not mention the plan that these students would be sent to their hometowns after their education, and instead asserted that the graduates would continue to work as assistants at the school. A letter was sent to Hüdâvendigâr (Bursa/Brussa and its surroundings) and Aydın *müşīr*s (pasha of the

[78] "In these efforts he met many obstacles, and with difficulty got the ground which was rather stiff and covered with grass, in proper order for cotton." "From Constantinople," *The Daily National Whig*, 18 October 1847, 2.
[79] Hunt, "The Culture of Cotton in Turkey," *Hunt's Merchants' Magazine* (February 1852): 156–59.
[80] "From Constantinople," *The Daily National Whig*, 18 October 1847, 2. Another source stated that the number of Muslim and Armenian students, who were initially equal, changed under the influence of the Dadians, and that in April 1847, out of 15 students, nine were Armenians and six were Muslims. MacFarlane, *Kismet*, 332. Before the opening of the Taʿlīm-ḫāne, there were other Armenians who were sent abroad for agricultural education; even if the Armenians outnumbered other nationalities, it stands doubtful how much this is related to the Dadians.

highest rank), Varna governor, Izmit *muḥaṣṣıl* (tax-collector), and Saruhan (today's Manisa and its surroundings), and Sérres district governors that the students who were educated in the Zirāʿat Taʿlīm-ḫānesi would be sent to their hometowns with a *şehādet-nāme* (diploma) from Dr Davis, that they would implement the modern cotton farming methods they learnt in their hometowns and teach them to their compatriots.[81] The related article also set out that (exotic) cotton seeds would be given to the graduates, they would expand cotton farming in their hometowns, and thus cotton would be grown at an affordable price for the Zeytinburnu *Basma Fabrika-i Hümāyūnu* (Cotton Printing *Factory*).[82] Furthermore, it was stated in the document that the land (field), tools-equipment, and animals required for agriculture would be met from the *māl ṣandığı* (office of the collector of taxes or a sort of the local subdivision of treasury).[83] For this policy to work, senior officials in the regions were ordered to ensure whether the students sent were working in accordance with the instructions.[84] The workers, consisting of 16 people in total, brought from Adana, Aydın, Saruhan, Sérres, and Izmit in groups of three, were given some American cotton seeds—50 *ḳıyye*s/*oḳḳa*s (about 64 kilogrammes) for those returning to Adana, 25 ḳıyyes for those returning to other provinces—and instructions describing the

[81] BOA, A.}MKT.MHM 3/5, 25 Muḥarrem 1264/2 January 1848.
[82] ". . . Basma Fabrika-i Hümāyūnı içün fīʾāt-ı münāsebe ile mübāyaʿa olunmak . . . ." [. . . to be purchased at a favourable price for the Imperial Cotton Printing Factory . . . .] BOA, A.}MKT.MHM 3/5, 25 Muḥarrem 1264/2 January 1848. It should be underlined that these so-called factories were not *factories* in the sense understood today. In the following chapters of the thesis, the discussions on the distinction between factory and facility will be briefly mentioned (*cf*. footnote 247).
[83] ". . . pamuk zerʿi emrinde ʿamele-i merḳūme ḥaḳḳlarında her dürlü muʿāvenetiñ icrāʾsı yaʿnī tarla ve ḥayvānātı olmayanlara münāsib ve münbit maḥallerde tarla irāʾe ve lüzūmı olan ḥayvānāt ve levāzımāt-ı sāʾire iʿṭāʾ olunarak meṣārif-i vāḳıʿalarınıñ māl ṣandığından tesviye ve īfāʾsıyle poliçesiniñ bu-bābına keşīde olunması . . . ." [. . . the execution of all kinds of assistance for the labourers mentioned in the cotton farming business, that is, giving fields to those who do not have fields and animals in appropriate and fertile places, and providing the necessary animals and various required goods, tools, and materials and paying their expenses from the *māl ṣandığı*, and writing them into this section of the policy . . . .] BOA, A.}MKT.MHM 3/5, 25 Muḥarrem 1264/2 January 1848.
[84] ". . . icrāʾ-yı iḳtiżāʾsına diḳḳat ve mübāderet kılınması iḳtiżāʾ-yı irāde-i seniyye-i cenāb-ı pādişāhīden olmasıyle . . . ." [. . . as it is required by the order of the supreme Sultan to pay attention to its execution as necessary and to undertake it immediately . . . .] BOA, A.}MKT.MHM 3/5, 25 Muḥarrem 1264/2 January 1848.

intricacies of American cotton cultivation, while they were taking the theoretical and practical knowledge they learnt in the Zirāʿat Taʿlīm-ḫānesi to their hometowns.[85] Unfortunately, these actors were not followed up, as the Taʿlīm-ḫāne was defined as a failed project. Therefore, it could not been determined how these actors, who were crucial since they were sensory actors in cotton production, would benefit from the American Civil War.

On the other hand, Davis communicated with other sensory actors through the prominence of the Zirāʿat Taʿlīm-ḫānesi. *The London Morning Chronicle*'s Istanbul correspondent mentioned that he distinguished Davis in the opening speech of the Mechanics' Institute in Hasköy in 1847: "There were besides, also Armenian members present, and some Americans, among whom was Dr Davis, a gentleman who is director of a model farm which is to be of 4,000-acres extent, in the neighbourhood."[86] It is of value to note that Davis was also present at such a meeting. Because while proving once again that Davis was a leading name in agronomy, the occasion allows all actors to be observed together *in action*. Among the attendees of the meeting were John Hague, the manager of the ironworks at the industrial complex in Zeytinburnu, Edwards Phillips, the manager of the cotton mill, and 50 British operatives and engineers who were part of the small British colony in Hasköy.[87] The movement of workers from one area to another has played a vital role in the spread of technology and the type of industry that has taken root in a particular

[85] Kırlı, "Ziraat Talimhanesi Muallimi Doktor Davis," 437. Kırlı contends that the process of separating the American cotton to be produced here from its seeds will be done in the Cotton Printing Factory with a particular machine, the so-called "Çin Tezgâhı" (Chinese Workbench), unlike the domestic cotton. There is a slight error due to the misunderstanding of Ottoman Turkish and the author's lack of technical knowledge about cotton fibre production. The machine to be used in the process of separating the cotton from its seeds is called cotton gin (*çırçır*), and the process is called ginning (*çırçırlama*).
[86] "A Mechanic's Institute in Turkey," *The Farmer and Mechanic* (9 September 1847): 437.
[87] John Hague is a British engineer famous for his work on pneumatic transfer of power. "Prospective Changes in Mechanics," *The British and Foreign Review* (1838): 685.

region. Donald Quataert refers to this situation as follows: "European history is full of stories of British subjects who went abroad to install, demonstrate, leach, and manage."[88] Mustafa Reşid Pasha, Mehmed Emin Âlî Pasha, and Keçecizâde Mehmed Fu'ad Pasha are among the honorary members of the Mechanics' Institute, which also helps to contextualise Davis in Ottoman history, revealing the empire's dependence on foreign experts.[89] In this period, Istanbul started to gain the character of an intellectual *hub*, especially for British experts from many dissimilar fields. Even though scholars like Kris Manjapra described the "age of experts" as imperial capitalism's (sometimes it is called "scientific imperialism" as well) "project" of turning people into exploitable populations,[90] it can be argued that these specialists brought more benefit than harm to the Ottoman Empire.[91] However, it is not possible to get out of such a vicious debate, as in the benefit-harm dichotomy, unless one avoids being hasty in affixing any labels while scrutinising the activities of a group that has hitherto been largely invisible in the literature.

The need for expertise rises in some agricultural products that require special attention, such as cotton. Under ideal conditions, cotton needs 200 frost-free days, hot summer air, and 24 inches (60.96 centimetres) of rain during the growing season. There should be no disease or insect problem as well.[92] Thus, non-human actors,

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[88] Quataert, *Manufacturing and Technology Transfer in the Ottoman Empire*, 9.
[89] "A Mechanic's Institute in Turkey," *The Farmer and Mechanic* (9 September 1847): 437; and "Education in Turkey," *The Young American's Magazine of Self-Improvement* (1847): 312.
[90] Manjapra, "The Semiperipheral Hand," 200.
[91] Although many experts had established close relations with the capital, they did not directly or indirectly participate in the acts and practices of violence in the Ottoman Empire as in the colonial countries. Foreign experts responded to the need for specialists in cities and rural areas. As the demand for industrial agriculture increased and the education in this field spread to the grassroots, the need for these experts diminished over time. Şevket Pamuk also draws a positive picture, stating that while the share of manufacturing activities declined between 1820 and 1870, rising agricultural production and specialisation in agriculture, especially on the coastlines, increased the income per capita by about 0.5% annually and by about 30% in total fifty years between 1820 and 1870. Pamuk, "The Ottoman Empire," 1:187. This trend of increase plunged in the crisis environment of the 1870s and continued to fluctuate almost steadily until the 1900s. Karaman and Pamuk, "Ottoman State Finances in European Perspective," 622.
[92] Hayter, "Expanding the Cotton Kingdom," 226.

such as climate, precipitation regime, and soil, also participate in the narrative. That being the case, a narrative exclusively centred on human actors/objects becomes out of the question. The classification here is made according to Graham Harman's object definition (*cf.* footnotes 5, 8, 11, and 13).[93] It can be argued that the biggest challenge the Taʿlīm-ḫāne faced was financial (mis)management. In the first year Davis took office, with the modern agricultural activities he carried out and the years of experience he gained in South Carolina, he achieved a revenue of 151,000 piastres at the Taʿlīm-ḫāne, while the income obtained at the end of the second year could not even reach 20,000 piastres.[94] There was an urgent need for raw cotton at the factory in Zeytinburnu, but first, Davis had to gin the cotton. The lack of a sufficient number of cotton gins was already hampering his work. In addition, the cotton seeds Davis requested were not delivered to Davis on time. However, it was not the only problem that hindered him throughout the process. Even in the collection of cotton from the field, there was a shortage of workers.[95] Besides, the expected performance from the students was not achieved.[96] This would initiate a controversy between Davis and the Ottoman government that would last for a while: Was Davis responsible for such a dramatic decline after the first year's success, despite significant expenditures to remedy infrastructure deficiencies?[97]

[93] For Harman, an object is something that cannot be reduced wholly to its components or its effects on other things. Harman, *Object-Oriented Ontology*, 50. This is the only way to speak without limiting the objectivity of an object to its connections with people. Otherwise, *correlationism*, that is, a plane where it is not possible to talk about the world without people and about people without the world, and which can only talk about a correlation or harmony between these two, remains in need.
[94] Kırlı, "Ziraat Talimhanesi Muallimi Doktor Davis," 438.
[95] MacFarlane, *Kismet*, 322. Davis's experience, willy-nilly, recalls the following words of David Hume: "We cannot reasonably expect, that a piece of woollen cloth will be wrought to perfection in a nation, which is ignorant of astronomy, or where ethics are neglected." Hume, *Political Essays*, 107.
[96] MacFarlane stated that he never saw these students at work during the time he visited the Taʿlīm-ḫāne, that Davis's brother Nathan tried to teach English to the students with the help of a dragoman, and that the students were "smoking pipes at a coffee shop in the village." MacFarlane, *Kismet*, 332.
[97] BOA, D.DRB.İ 23/11, 22 Rebīʿü'l-āḫir 1264/28 March 1848.

To such an extent that MacFarlane, who shared Davis's troubles, went one step further and recognised that Turkey's agriculture could not be successfully sustained under the current conditions, and suggested that the entrepreneurs of European countries establish their own farms and small colonies that would not disturb the Ottoman government. It was believed that it would be advantageous to send settlers who would set a good example, as would later be suggested to the Ottoman government at intervals by the CSA.[98] So much so that it may be attempted to draw an admittedly limited picture of the Ottoman bureaucracy of the period, based on Davis's complaints per se. His criticisms revolve around the Dadians' mismanagement and corruption. For instance, local cotton (i.e., Aydın cotton) was used for a period in the Taʿlīm-ḫāne.[99] As claimed by Davis, this was due to the late ordering of imported cotton seeds by the Dadians by not showing due diligence. Due to this delay, when the danger of missing the cotton planting time arose, the Dadians contacted the governor of Aydın and turned to the local cotton in order not to let anyone notice the situation and not to curb the cotton planting activities in the Taʿlīm-ḫāne. However, there were substantial differences between imported cotton and local cotton. The seeds Davis demanded were among the best in South Carolina and Georgia. Each pod contained at least six times more cotton fibres than domestic cotton pods grown in Turkey, and its quality was as superior as its quantity.[100] MacFarlane also blamed the Dadians and claimed that they benefited from the Sultan's "innocence" not only in raw cotton but also in woollen cloths produced in the Cotton Printing Factory. According to MacFarlane, woollen cloths brought from

[98] MacFarlane, *Turkey and Its Destiny*, 1:172.
[99] BOA, A.}MKT.MHM 5/78, 24 Cemāẕīyyü'l-āḫir 1264/28 May 1848.
[100] MacFarlane, *Kismet*, 328. Despite such disadvantages of domestic cotton, there were also some advantages. For example, Ottoman cotton absorbed dye better than American cotton. İnalcık, *Türkiye Tekstil Tarihi Üzerine Araştırmalar*, 113.

Europe were stripped of their brands and claimed to be the products of the Printing Factory.[101] In the absence of imported cotton, taking shelter in domestic cotton meant saving the day. Another solution proposed by MacFarlane was quite radical. He recommended that the Armenians, whom he held to be the source of each and every problem and the cause of every evil, should have been excluded from the project, the infrastructure deficiencies should have been corrected, and the farm should have been exempted from all taxes and fees at least for three years in order to achieve a more "liberal" development.[102]

The list of accusations against the Dadians is quite long. According to Davis, the ploughs recorded in the financial records of 1848 were never actually purchased. Realising that the ploughs, which were said to have been bought for 12,000 piastres, were not actually bought, Davis claimed that he learnt about this corruption much later.[103] In another example, he asserted that the books that he requested from Barutçubaşı (Hoca) Ohannes Dadian for the Taʿlīm-ḫāne students and that would be imported from Britain were not imported at all. Although Davis requested the books several times, he was told that the students in the Zirāʿat Taʿlīm-ḫānesi had not yet received the training to understand these books. As might be expected, he was questioning whether Ohannes was qualified to make such a judgement. In a way, he felt that Ohannes was overstepping his bounds. Davis also doubted that he had complete autonomy in the running of farm affairs.[104] His suspicions may be partially

[101] MacFarlane, *Kismet*, 323.
[102] MacFarlane, *Turkey and Its Destiny*, 1:174. The first to take MacFarlane's claims seriously is Ali Rızâ Seyfi, whose narrative of the Dadians is as harsh as MacFarlane's. In his two-part article written in the *Cumhuriyet*, Seyfi attributes the relative failure of the Zirāʿat Taʿlīm-ḫānesi and factories only to the Dadians. This article, which is not supported by any primary or secondary source other than MacFarlane, can also be read as a part of the anti-Ottoman and nationalist literature of the period. For more detailed information, please see Seyfi, "İmparatorluk Devrinde Sanayileşme Komedisi (I)," *Cumhuriyet*, 31 July 1939, 5; and Seyfi, "İmparatorluk Devrinde Sanayileşme Komedisi (II)," *Cumhuriyet*, 5 August 1939, 5.
[103] Kırlı, "Ziraat Talimhanesi Muallimi Doktor Davis," 449.
[104] Ibid., 450.

correct. Since agriculture was taught with new methods in an educational institution for the first time in the Ottoman Empire, there was a shortage of materials on the subject. Therefore, the books had to be obtained and translated immediately. Apart from Davis's personal efforts, an important book import encountered in the Ottoman State Archive belongs to October 1850, after Davis's departure. In this record, it is seen that six volumes were sent from a book copyrighted in the French Agricultural School by the Paris Embassy of the Ottoman Empire.[105] Nonetheless, there is no note that these are the books Davis requested. In this respect, it can be assumed that the problems related to the importation of books disappeared after his departure. In another anecdote, Davis stated that he sometimes had to spend out of his own pocket because of such predicaments. Except for the treatises on cotton cultivation for a particular purpose, he had also some other works translated, namely, pamphlets and instruction manuals on agronomy in general, "fennī zirāʿat beyānı żımnında resāʾil ve taʿlīm-nāme-i mütenevviʿalar," by covering the translation costs out of his own pocket.[106] The other substantial problem was with Davis's salary. He received a salary of 26,000 piastres. Considering the wages of 750 to 1,000 piastres for senior officials who held administrative positions in the Ottoman Empire during the 1840s, Davis's salary was very high. This amount must have made the job attractive to him, but there were occasional setbacks in the payment of his salary.[107]

It is unclear how much the Dadians were affected by Davis's complaints,[108] but no record of proper investigation or any lawsuit was found against them. Davis

[105] BOA, HR.TO 70/86, 7 October 1850.
[106] BOA, A.}MKT 148/51, 16 Şevvāl 1264/15 September 1848.
[107] According to US sources, his salary was $15,000. Allen, *et al*., "The Cashmere Shall Goat," *The American Cotton Planter* (September 1856): 271. Delays and disruptions in payments can be easily tracked from archive documents. Kırlı, "Ziraat Talimhanesi Muallimi Doktor Davis," 422.
[108] For correspondence, please see BOA, A.}MKT 148/51, 16 Şevvāl 1264/15 September 1848; BOA, HR.TO 145/34, 17 June 1848; BOA, HR.TO 145/35, 15 September 1848; and BOA, HR.TO 145/36, 15 October 1848.

must have been justified in his complaints, as he was paid compensation of 576,000 piastres from the *Ḫazīne-i Ḫāṣṣa* (Imperial Treasury).[109] Based on this calculation, Davis had received the payment of 24,000 piastres for each remaining month of the contract.[110] Receiving a large amount of compensation from the Ottoman state, Davis asked the statesmen for a new chance and requested a licence to continue cotton cultivation in the southern regions of Anatolia, where more favourable climatic conditions prevailed for American cotton seeds, but this request was not accepted in the end. Therefore, the claim that Davis returned to the United States primarily due to his health problems was not sufficient on its own.[111] Neither Davis's desire to work in another region nor his health problems were reflected in the British state and local archives—as far as I can detect at least.[112] Instead, he was said to have been disturbed by his awful experience and quit the job. Despite all his complaints and difficulties, Davis was probably satisfied with the salary he received, so he wanted to continue his work in Turkey for a while. It must be a twist of fate that Davis, whose request was not fulfilled, was nicknamed "Turkey Jim" in the United States where he returned after his unpleasant experience in Turkey.[113]

Another significant actor who is a direct extension of this whole story is Krikor Agathon, of Armenian origin. He was educated at the renowned Royal Agronomic Institution of Grignon in France (i.e., *l'Institution royale agronomique de*

[109] Kırlı, "Ziraat Talimhanesi Muallimi Doktor Davis," 439.
[110] Ibid.
[111] BOA, A.}MKT 148/51, 16 Şevvāl 1264/15 September 1848. "Failing health and the loss of the sight in one eye prompted Doctor Davis to return to America for the Turkish climate was against him." Bolick, *A Fairfield Sketchbook*, 250. Even though this information is repeated by other sources, it should be underlined that *A Fairfield Sketchbook* contains some inaccurate information about Dr Davis. For instance, J. S. Bolick highlighted that Davis was appointed to Turkey as the "Minister of Agriculture" and that he was close friends with Sultan Abdülmecid. It is evident that Davis did not serve as the Minister of Agriculture. There is no trace of him establishing a close friendship with Abdülmecid; anyway, how possible such a relationship is, is yet another mystery.
[112] TNA, FO 195/290, 20 October 1848. The UK National Archives at Kew, London, hereinafter abbreviated as TNA.
[113] Bolick, *A Fairfield Sketchbook*, 252.

Grignon), and it was requested from Agathon to take the vacant seat under the administration of the Zirāʿat Taʿlīm-ḫānesi after Dr Davis.[114] Government officials had unfaltering confidence in Agathon because of the training he had received in Grignon. If Davis and MacFarlane's accusations against the Dadians were accurate, Agathon's being an Armenian may also have given him an advantage. In the *Journal de Constantinople*, some aspects of this still implicit debate were reflected in the context of the Zirāʿat Taʿlīm-ḫānesi. With Agathon's taking the head, that is, with the strengthening of the hand of the Armenian subjects in the administration in line with the allegations of Davis and MacFarlane, the news and praise about the Zirāʿat Taʿlīm-ḫānesi surged in the *Journal de Constantinople*. For example, in a news report, it is said that the school has not produced satisfactory results so far, namely under Davis, that production has been expensive and inefficient, but now the administration has been handed over to more skilled hands, and real progress has been made.[115] Continuing to work in the Ottoman Empire after Davis's departure, John Lawrence Smith was rewarded with a medal for his contribution to the Zirāʿat Taʿlīm-ḫānesi.[116] During the time that Smith continued to serve in the country for a while without his consent, there was no record of this discussion about the Zirāʿat

[114] "M. Agathon, arménien, élève de l'école d'agriculture de Grignon, en France, vient d'être appelé à la direction de l'école impériale d'agriculture de San-Stefano, en remplacement du docteur Davis, américain." [Mr. Agathon, student of the school of agriculture of Grignon, in France, has just been called to the direction/management of the Imperial School of Agriculture of San-Stefano, replacing Dr Davis.] "Nouvelles diverses," *Journal de Constantinople*, no. 124, 29 October 1848, 2.
[115] "Intérieur. Constantinople," *Journal de Constantinople*, no. 207, 29 December 1849, 1.
[116] "Muḳaddemā bir müddet Zirāʿat Taʿlīm-ḫānesi'nde müstaḫdem olub muʾaḫḫaren Amerika'ya ʿavdet itmiş olan Mösyö اسميثه [Smith'e] bir ʿaded nişān-ı ʿālī iʿṭāʾsı Amerika sefāreti cānibinden iltimās olunmakda olmasıyle merḳūma dördüncü numerodan bir ḳıṭʿa nişān-ı ẕī-şān ʿināyet ve iḥsān buyurulması münāsib gibi görünüyor ise de ol-bābda her ne-vechle emr ü fermān-ı meʿālī-ʿunvān-ı ḥażret-i tāc-dārī şeref-sünūḥ ve ṣudūr buyurulur ise icrāʾ-yı muḳteżā-yı münīfine mübāderet olunacağı beyānıyle teẕkire." [It is an official correspondence with the declaration that whatever the Sultan commands in this regard will be duly executed, though Monsieur Smith, who was a servant in the Zirāʿat Taʿlīm-ḫānesi for a while and then returned to the United States, was requested by the US embassy to be given a decoration as an honour, it seems appropriate to bestow a fourth-degree medal on the person mentioned.] BOA, A.}AMD 16/21, 3 Ṣafer 1266/19 December 1849.

Taʿlīm-ḫānesi. It was possible that he remained silent in the debate due his desire to leave Turkey.

It is noteworthy that a new narrative has been developed in these news reports. Although the *Journal de Constantinople* made news supporting the rise of scientific agriculture when the Taʿlīm-ḫāne was first established, there was no praise in the *Journal de Constantinople* exclusively for Davis, who was underlined in almost every source of the period as one of the most outstanding experts of his time in this field (agronomy and animal breeding). On the other hand, Davis's complaints did not find coverage in any government-funded newspaper column. In this respect, it can be asserted that Davis has been left entirely alone. Apart from his complaints about the irregular payment of his salary and the problems he experienced due to not being an Ottoman subject, Davis, who was confident in himself and his work due to the education and experience he had, did not remain silent in the face of the difficulties and corruption that he witnessed and disturbed those who were involved in the project and who had been subjected to some ugly accusations. So much so that the *Journal de Constantinople* articles published after Davis's departure began to praise the new officials who took over the project, even though it was not customary before, disparaged the old studies and presented a new narrative to its readers, especially to the government. As might be expected, scientific studies were also carried out after the new administration. Under the direction of the Minister of Trade and Public Works, Hekim İsmâil Pasha, plans were drawn up by M. E. Carenza to drain the swamps in Ayamama so that they could be used for agricultural purposes (see Appendix A for Carenza's relevant plan).[117] Yet, is this new narrative unlikely to be true? If the new narrative in the *Journal de Constantinople* is correct, that is, if

[117] BOA, HRT.h 687, 26 Ṣafer 1267/31 December 1850.

Davis's work has been surpassed and the project has become more successful than before, why was the Taʿlīm-ḫāne closed after a very short time? For sake of clarity, there was no such thing as the disappearance of the need. Such that for the needs of the Basma Fabrika-i Hümāyūnu in Veliefendi (Zeytinburnu), American cotton seeds continued to be distributed and planted in appropriate fields in Sérres and Drama.[118] If it had succeeded, there was no point in ending cotton cultivation in an area closer to the factory. This point is one of the most significant rifts in the post-Davis-constructed narrative.

The most reasonable explanation for the cause of the trouble between the Dadians and Davis, who seemed to have the most suitable profiles to handle a project like the Zirāʿat Taʿlīm-ḫānesi, can be understood through the analysis of a situation that Edhem Eldem points out. According to Eldem, the Ottoman state has generated a sector that has become more and more independent from the productive sectors and fed on them parasitically through protection, control, and intervention, and that this sector has gradually come to be more and more dominant.[119] In other words, some privileged families, such as the Dadians, who had strong relations with political interest groups and were intertwined with limited capital, were aware of the difficulties in industrial or agricultural investments, the immaturity of the markets in these sectors, and the meagre profits to be made. Moreover, considering the volatility of all this, namely their insecurity, it was possible that they might have wanted to set up a gambling table for themselves where the house never lost. Because it did not make much sense for families like the Dadians to turn to colonial trade that did not exist anyway or to foreign trade that was relatively limited. Attaching themselves to the state through structures that served the army or produced for the needs of the

[118] BOA, HH.İ 15/39, 9 Şaʿbān 1271/27 April 1855.
[119] Eldem, "Osmanlı Devleti ve Fransa" 24.

domestic market under the auspices of the state was the most feasible way, both economically and politically, for families like the Dadians.[120] In this context, the criticism of the British also gains meaning: "The old aristocracy, who were bad enough without doubt, were gone, and had been succeeded by a bureaucracy infinitely worse."[121]

It was decided to move the school to the *Mekteb-i Ṭıbbiyye Neẓāreti* (Ministry of Medical School) first,[122] and it was closed after the students studied there for a while.[123] It was recognised that the expenses of the school were heavy on the budget. In addition, its yield, namely its positive return was low. In fact, it would be appropriate to maintain that this point played a decisive role in the closure of the Taʿlīm-ḫāne. Besides, the instructors did not receive salaries for five months when the school was closed. Finally, their salaries were paid, albeit belatedly.[124] A project that was expected to achieve great success in a short time had thus expired. The model farm project, seen as a burden that the state treasury could not handle, was shelved for a while.[125] Even though the Zirāʿat Taʿlīm-ḫānesi and its model farm

[120] Donald Quataert also refers to the indifference of the Ottoman elites to commercial life. In addition, Quataert characterises state factories as facilities that meet the government's needs rather than being places that serve economic development. Quataert, *Manufacturing and Technology Transfer in the Ottoman Empire*, 58–59.
[121] 171 Parl. Deb. (3d ser.) (29 May 1863) cols. 6–148.
[122] BOA, İ.MVL 197/6092, 14 Rebīʿü'l-evvel 1267/17 January 1851.
[123] BOA, A.}AMD 33/70, 29 Muḥarrem 1268/24 November 1851; BOA, A.}AMD 31/97, 14 Ẕi'l-ḥicce 1267/10 October 1851; and BOA, İ.DH 241/14635, 16 Ẕi'l-ḥicce 1267/12 October 1851.
[124] BOA, A.}MKT.MHM 44/72, 19 Cemāẕīyyü'l-evvel 1268/11 March 1852; BOA, İ.MVL 239/8524, 5 Ramażān 1268/23 June 1852; BOA, A.}MKT.MVL 54/17, 20 Ramażān 1268/8 July 1852; and BOA, A.}MKT.NZD 60/97, 29 Ẕi'l-ḥicce 1268/14 October 1852.
[125] In 1852, Ion Ionescu de la Brad, one of the instructors of the Zirāʿat Taʿlīm-ḫānesi, wanted to take over the management of this place and make the model farm project successful with a scientific effort: "Établir une exploitation agricole dans un des centres de production, dans le but de montres aux cultivateurs du pays qu'au moyen de procédés et de méthodes approuvées par l'expérience et la science on peut réaliser de bien plus grands bénéfices que ceux qu'ils obtiennent actuellement, c'est contribuer très puisement et très efficacement à l'augmentation de la production de l'Empire." [. . . by means of processes and methods approved by experience and science far greater profits can be made than those which they currently obtain . . . to the increase in the production of the empire.] BOA, HR.TO 418/4, 20 July 1852. It is unspecified whether Ionescu, who attracted attention with his trip to Tırhala (Trikala) as well as his scientific studies on the agriculture of this region—some of which were published in the *Journal de Constantinople*—may have acquired the uncertain management of this place despite his ties to Mustafa Reşid Pasha. The school and modern field project that Ionescu

near San Stefano were tried to be revived in 1871, it could not be realised. Although the bylaw of the project was ready, there was no actual attempt to put it into operation. About six years later, Amasyan Efendi,[126] who took part in the preparation of the envisaged innovations and regulations regarding agriculture, was instructed to prepare a new report on the necessary changes in agricultural education in the Ottoman Empire and the grounding of these changes.[127] Such a task indicates that the Ottomans still had difficulties in preparing a road map and did not consider the previous studies sufficient. A comparison of the nineteenth-century *levāʾiḥ* (plural of *lāyiḥa*) on agricultural education is needed for a more elaborated interpretation. It coincided with the period of Ahmed Cevdet Pasha, in 1878, when Amasyan Efendi brought the required agricultural school back to the agenda and started to take the necessary steps in this direction. Amasyan was appointed to the Directorate of Agriculture after Ahmed Cevdet Pasha became the Minister of Trade, but he could not become successful in putting his ideas into practice.[128] The story of the Zirāʿat Taʿlīm-ḫānesi, which started in 1847, continued in Halkalı in 1888, though not where it began.[129] That is why the Zirāʿat Taʿlīm-ḫānesi was excluded from the cotton production process after Davis's departure. In 1888, the *Ticāret ve Nāfiʿa Neẓāreti* (Ministry of Trade and Public Works) brought forward a new solution proposal in

desired to establish in Dobruja before the Zirāʿat Taʿlīm-ḫānesi and submitted through Ahmed Vefik Efendi was also not accepted. Kaya, "Ion Ionescu de la Brad," 103; and Kaya, "Searching for Economic and Administrative Reforms," 81.

[126] It was usual for Amasyan Efendi, who was educated in the well-known agricultural schools in Versailles and Grignon, to be considered the most suitable candidate for such a task and to take the vacant post after Davis's return to his country. The impact of the education that Amasyan Efendi received can be easily noticed in the lāyiḥa, which was also published in the *Zirāʿat Gazetesi* three years after it was presented. In this lāyiḥa, Amasyan states that France is the leading country in agricultural science (agronomy) and talks about the form of agricultural education in France. *Zirāʿat Gazetesi*, no. 1, 17 Şaʿbān 1298/15 July 1881, 98–99.

[127] Yıldırım, "Halkalı Ziraat Mektebi'nin Açılış Sürecine Dair Bazı Mülahazalar ve Amasyan Efendi'nin Layihası," 271.

[128] Ibid., 287.

[129] BOA, İ.MMS 78/3427, 21 Şevvāl 1301/14 August 1884.

order to spread agricultural reform throughout the empire.[130] According to the new proposal, model or sample fields (*champs modèles*) would be established instead of model farms (*fermes modèles*) all over the empire, and agriculture would be carried out using the latest agricultural methods utilising up-to-date tools and equipment brought from Western European countries, such as France and Germany, and in this way, the efficiency of modern farming methods would be demonstrated to farmers in practice. Eventually, this solution proposal did not contribute to re-entering the global cotton market, and the missed opportunity during the American Civil War could not be obtained again.

There are still questions to be asked. For example, why Abdülmecid, who was allegedly involved in agriculture, had a farm in Beykoz and spent time there, never visited the Zirāʿat Taʿlīm-ẖānesi?[131] A narrative holding up this assertion of MacFarlane is also available in the *Journal de Constantinople*. On 6 September 1848, Sultan Abdülmecid visited the iron factory (a fortiori, the ironworks) in Zeytinburnu and expressed his satisfaction with the work he observed there. Subsequently, he inspected the *Basma-ẖāne* (calico-house), and the steam engine in the Basma-ẖāne was put into operation for the first time in the presence of Abdülmecid.[132] The Sultan halted for a few minutes on the Zeytinburnu-Fatih road to get information about the powder mills driven by a steam engine, which were built and assembled in the country by John Hagues and his sons Robert-John and Isaac. After being greeted by the Dadians and resting for two hours in the *Barut-ẖāne*

[130] BOA, A.}MKT.MHM 727/31, 10 Şaʿbān 1310/27 February 1893.
[131] MacFarlane, *Kismet*, 337.
[132] When considered together with the complex dynamics of agricultural life, the Basma-ẖāne has a crucial place in the cotton production process of the empire. The cotton textile manufactures (calicoes) of this place were first exhibited in the *Ticāret-ẖāne-i ʿĀmire* (Imperial House of Commerce) and then at the Great Exhibition of 1851 in London, the first international exhibition attended by the Ottoman Empire. BOA, A.}MKT.NZD 29/92, 18 Cemāz̲īyyü'l-evvel 1267/21 March 1851.

(gunpowder-mill) in Bakırköy, he visited the assembly workshop. In the workshop was a 100-horsepower steam engine built by Turkish and Armenian workers under the direction of Mr Dadian and John Hagues with the assistance of European craftsmen and workers. Here, it was recognised that besides Boghos Dadian, Abdülmecid was accompanied by Boghos's son Arakel. Referring to what the *Journal de Constantinople* stated, Abdülmecid gladly followed the machine demonstrations in the workshop. It probably would not have been expected otherwise. Then, Ahmed Fethi Pasha presented the foreman of the workshop, Samuel Wills, to the Sultan. Apart from these people, the assistant manager Robert Hagues and the second engineer Mr Wilson were among those presented to Abdülmecid. The newspaper underlined the Sultan's spoke highly of the establishment as he left here. It should not be overlooked that Abdülmecid also went to the shipyards during this short excursion and even spared time for the iron steamer built there under the direction of Edwards Phillips. While leaving San Stefano, the Sultan passed by the model farm under the management of Davis and went to Davutpaşa to attend the noon prayer.[133]

Is the narrative of owning a farm and being interested in farming, created for Abdülmecid, a fiction? Could Mustafa Reşid Pasha, who already had a model farm, be a more influential figure behind the project than Abdülmecid? MacFarlane plainly sets down that he personally visited Mustafa Reşid Pasha's *çiftlik* (estate), that "several Perotes [*Peralı*]" told him that it was indeed a "model farm," and that the

[133] "En quittant San-Stefano, le Sultan passa par la ferme-modèle placée sous la direction du docteur Davies [*sic*], et se rendit ensuite à Daoud Pacha, pour assister à la prière de midi." [Leaving San-Stefano, the Sultan passed through the model farm placed under the direction of Doctor Davies [*sic*], and then went to Daoud Pasha, to attend the midday prayer.] "Nouvelles diverses," *Journal de Constantinople*, no. 114, 9 September 1848, 2.

Pasha was engaged in French-style scientific agriculture there.[134] Could the project, which was being attempted to be realised in the Zirāʿat Taʿlīm-ḫānesi, be a part of the vision of Mustafa Reşid Pasha, as MacFarlane puts forward, in addition to the urgent needs of the industrial zone on the Bakırköy-Zeytinburnu line? Where does the role of Mustafa Reşid Pasha fit in this network of relations? As is turned out, a history of any commodity needs nuance. Finding the inspiration for this nuance in cotton itself is possible. To achieve such a balance, two well-meaning crimes must be committed: killing the 'story' by making the first letter of 'history' bold and embarking on an exhausting journey from general to specific. It is also necessary to establish and study the relationship networks of agricultural projects during the Tanẓīmāt era. Lastly, the diagram below (see Figure 1) indicates the actors/objects playing a role in the Zirāʿat Taʿlīm-ḫānesi and beyond. It supports the main argument of the thesis, namely that cotton cultivation cannot be reduced to a single cause. The dynamic relationship of actors/objects problematises such an approach. In addition, this dynamic relationship reveals a complexity that prevents the events, people, and relationships affecting cotton agriculture from being presented in a hierarchy. The dynamic nature of the activities related to cotton agriculture continued in the same course until the American Civil War.

[134] MacFarlane, *Turkey and Its Destiny*, 2:381. Mustafa Reşid Pasha's interest in his model farm is also a highly complex subject. Although he was a model farm owner, the person who had been interested in the farm for a long time was a French named François Barreau. MacFarlane tells the story of this Frenchman in a rather tragic tone. Barreau, who grew up and brought up in the vineyards of Burgundy, was not content with what he learnt from his family and also received professional agricultural training. Mustafa Reşid Pasha met Barreau through M. Guizot and was impressed by his expertise in applied chemistry. Mustafa Reşid promised Barreau 1,000 piastres per month, a nice house to live in, and that his wishes for agricultural work would be fulfilled. Nonetheless, when he came to Istanbul, he saw that the promises made were not kept. He was left alone in a secluded farm outside of Istanbul. To put it another way, "[l]ike Dr. Davis at a later period, he could never get anything . . . ," please see MacFarlane, *Turkey and Its Destiny*, 2:385–87.

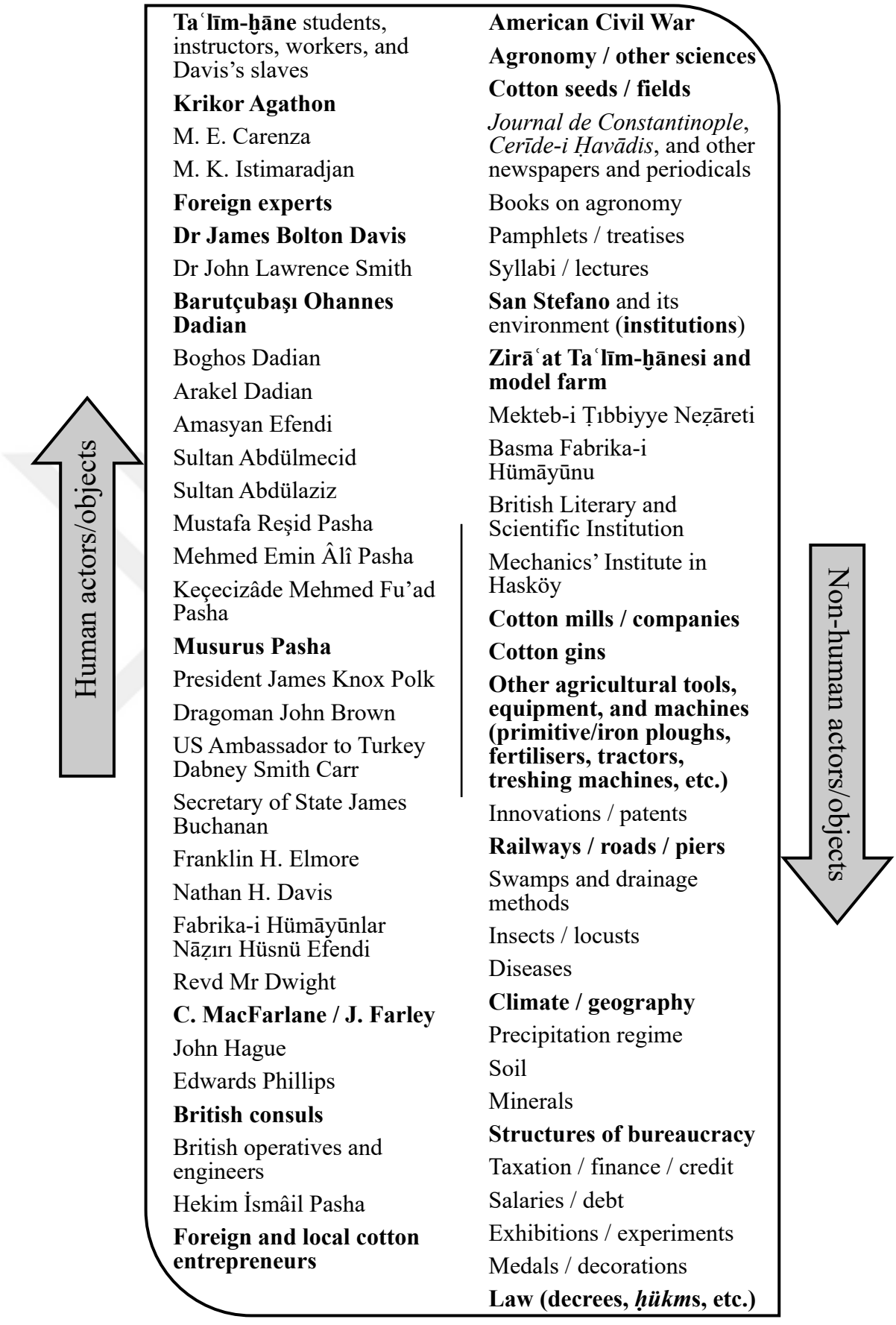

Figure 1. A diagram showing the actors/objects in the Taʿlīm-ḫāne and beyond

2.3 Searching for resources before the American Civil War

Although the Zirāʿat Taʿlīm-ḫānesi was recorded as a failed project, developments in cotton cultivation were not utterly shelved until the American Civil War. In an article published in *The New-York Quarterly*, it was noted that the government made every possible effort to promote scientific agriculture and industrial pursuits and that the problems encountered were caused by the people who undertook the administration of these actions.[135] Tremendous sums have been spent on model farms, cotton fields, agricultural and other machinery, schools and colleges, but almost all of these efforts were thwarted by the indifference and greed of the authorities.[136] The newspaper, which portrays a failure, states that faith in the Ottoman Empire in scientific agriculture and industry has been lost, at least for this generation: "This is the history of many similar efforts; and it will take at least the period of another generation, if not longer, before the Osmanlis will acquire the industrial habits and enterprise of the West."[137] Nevertheless, the newspaper had complete faith in the younger generation studying in modernising schools if the empire was not interrupted by foreign intrusion. The fact that western Anatolia and the Balkans were pivotal places for trade kept this conviction alive—i.e., the land was fertile, subsoil and surface resources were rich.

By 1850, it was seen that cotton cultivation efforts continued within the empire, although there was no extra attraction for the Ottomans to grow cotton yet. For example, in Baghdad, the incentive decision of the *Meclis-i Vālā-yı Aḥkām-ı ʿAdliyye* (Supreme Council of Judicial Ordinances) to promote silk, cotton, and indigo agriculture is noteworthy. It was said that these commodities were in demand

[135] "The Ottoman Empire and Its Polity," *The New-York Quarterly* (July 1855): 298.
[136] Ibid.
[137] Ibid., 299.

in Indochina, and it would be beneficial to produce these products and send them to the port of Basra.[138] In 1851, the Ottoman Empire participated in the London World's Fair, and all they did was not merely show up at this fair. In addition, developments in agriculture were closely followed.[139] Alongside the state, individual actors continued to be a part of cotton production. One of the sensory actors, Ion Ionescu, shared his suggestions on how to soar cotton production in Thessaly in his articles in the *Journal de Constantinople*. In particular, he pointed out that the soil was ploughed incorrectly. He stated that agricultural instruments in Europe were needed in the Ottoman Empire long before the Civil War.[140] It was crucial because the price of cotton in the market is determined by its quality and its quality by two features. The first of these is the grade of cotton, and the other is its fibre. The grade is an expression of its colour and cleanliness. In addition, based on Ion Ionescu, one of the incidents that undermined production was the conflicts between *ortakçı*s (sharecroppers), *çiftlik* (estate)-holders, and *subaşı*s who run the farms.[141] It is notable that actors, such as Ion Ionescu, wrote articles on cotton production because, in these years, the American press dealt with the Ottomans' relationship with science in a highly contemptuous manner: "They know the instruments of modern science only as childish toys."[142] However, according to the news of *The Charleston Daily Courier* dated 28 January 1852,[143] the Ottoman government introduced the cotton

[138] ". . . bu-miṣillü eşyāʾnıñ ise Hindūçīn (هندوچين) ṭaraflarında revāc ve iştihārı cihetiyle o-maḳūle maḥṣūlāt yetişdirildiği ḥālde Baṣra ve-belki daha berülerde olan uzak iskelelere naḳl ü irsālinde sühūlet ve menfaʿat olacağı . . . ." [. . . there will be convenience and benefit in transporting such commodities to Basra and perhaps even farther piers, because that type of crop is grown due to its reputation in Indochina . . . .] BOA, A.}AMD 21/75, 20 Ẕi'l-ḥicce 1266/27 October 1850.
[139] Önsoy, "Osmanlı İmparatorluğu'nun Katıldığı İlk Uluslararası Sergiler ve Sergi-i Umumi-i Osmani," 195.
[140] Hunt, "The Culture of Cotton in Turkey," *Hunt's Merchants' Magazine* (February 1852): 156–59.
[141] Kaya, "Ion Ionescu de la Brad," 108.
[142] "Essays, &c., on Theology and General Literature. The Confessions of an Enemy; or, the Unity of God a Revealed Doctrine," *The Methodist New Connexion Magazine* (1853): 9–10.
[143] This is the experiment that Charles Issawi sets out in his book based on the reports of the British consul in 1851. The report corroborates that the experiment was carried out to make Britain less dependent on the United States for raw cotton imports. Even though the cotton mentioned was not of

culture around Damascus in line with modern methods and techniques with the cotton seeds procured from the United States.[144]

The London Great Exhibition of 1851 was not the first and not the last experience in Ottoman efforts to revive agricultural production. Ottoman representatives, who participated in the International Exhibition (*l'Exposition universelle*) opened in Paris in 1855, attempted to prove that they could be an alternative to Europe if the necessary investment and support were given in agricultural products, including cotton.[145] The principal aim of the empire in participating in the exhibition was to demonstrate the productivity and potential of the Ottoman lands, to prove that the Ottoman subjects were skilled and experienced in the fields of agriculture, industry, and art. The products of 52 cotton producers were included in the exhibition to represent the Ottoman Empire.[146] In the same year, a small-scale distribution of American cotton seeds began to be cultivated in the country and subsequently for raw cotton to be processed in the Basma Fabrika-i Hümāyūnu.[147] Although the first crop obtained from the seeds distributed to Edirne and Aydın provinces as well as Saruhan, Sérres, and Izmit sanjaks (*sancak*s), no news was received from the crop afterwards, and it was ordered to investigate this situation in detail.[148]

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the same quality as in Florida, the British consul was content with the result. A similar experiment was also conducted in Jaffa, but it was concluded that the cotton grown there was not suitable for pressing machines in England. Issawi, *The Fertile Crescent*, 276.

[144] "Asia Minor Company (Limited)," *The Charleston Daily Courier*, 28 January 1852, 2; and *The Weekly National Intelligencer*, 27 May 1852, 5. Even if the pre-Civil War moves were not satisfactory, they might have impacted Mesopotamia to be highlighted as a promising region in the questionnaires sent by Britain to its consuls in the Ottoman Empire as of 1857. Issawi, *The Fertile Crescent*, 276–77.

[145] Önsoy, "Osmanlı İmparatorluğu'nun Katıldığı İlk Uluslararası Sergiler ve Sergi-i Umumi-i Osmani," 199.

[146] Önsoy, *Tanzimat Dönemi Osmanlı Sanayii ve Sanayileşme Politikası*, 68. Filibe (today's Plovdiv in southern Bulgaria) not only stood out as a remarkable place for cotton, but also the governorship of Filibe won a medal for its cotton products.

[147] BOA, A.}MKT.UM 213/87, 19 Ṣafer 1272/31 October 1855; BOA, HH.İ 15/39, 9 Ṣaʿbān 1271/27 April 1855; and BOA, A.}MKT.MHM 82/92, 14 Cemāz̲īyyü'l-evvel 1272/22 January 1856.

[148] BOA, HH.İ 17/81, 19 Ṣafer 1272/31 October 1855.

Infrastructure works persisted in the Ottoman Empire from the closing of the Taʿlīm-ḫāne to the beginning of the American Civil War. In the report sent by Mehmed Emin Âlî Pasha to Istanbul in 1853, it was detailed that the transportation network of the Aegean region was not sufficiently developed and, therefore, the transportation cost was high.[149] Not only trade and agriculture connoisseurs but also the ruling class were aware of the need to expand transportation and trade networks in order to facilitate the circulation of commercial and agricultural products. The report also mentions the necessity of solving safety problems related to production and transportation. The situation of the *żabṭiyye*s (gendarmes/police officers in the modern sense) in Izmir was expressed as a kind of disarray and this mess was one of the most urgent problems that needed to be overhauled for the sake of ". . . iʿmār-ı mülk ve ıṣlāḥ ve teʾmīn-i ḥāl-i tebaʿa emrinde leyl ü nehār maʿrūf ve mebẕūl ve teʾsīrāt-ı ḫayriyyesine günden güne görülmekde olan farḳ küllī āṯārı şühūd ve ʿudūl olan iḳdāmāt . . . ." [. . . the difference, which is comprehended and abundantly known day and night, and whose beneficial effects are seen day by day in the work of improving and ensuring the development of the country and the state of its subjects, is the continuous work/efforts, all of which are obvious and fair . . . .][150] The British merchants, who agreed with Âlî Pasha that the difficulties in transportation prevented the development of trade and agriculture in the region, also brought up the necessity of building a railway.[151] As a result of the diplomatic relations thus established, the privilege of constructing a railway between Izmir and Aydın was given to a British company on 23 September 1856.[152] A British company

[149] BOA, İ.MVL 270/10375, 17 Receb 1269/26 April 1853.
[150] BOA, İ.MVL 270/10375, 17 Receb 1269/26 April 1853.
[151] Izmir trade, which was 53 million francs in 1839, increased to 120 million francs in 1855. Özgün, "İzmir ve Artalanında Tarımsal Üretim ve Ticareti," 36.
[152] Kolay, "İzmir-Kasaba ve Uzantısı Demiryolu Hatları," 23.

called Asia Minor Cotton Company (first one) was established in the same year, but it failed to achieve success and stopped its activity a year later. These years were times when both successful and unsuccessful projects stood out for British actors. For example, in 1856, the construction of five new piers by British entrepreneurs began in Mersin port.[153]

To deal with such infrastructure works more professionally, an institution was established in 1858 under the name of the *Meclis-i Meʿābir* (Council of Transport and Infrastructure).[154] In this period, the issues concerning the solutions to infrastructure problems were mainly discussed in the Meclis-i Vālā and the Meclis-i Zirāʿat. A provision in the *Tapu Niẓām-nāmesi* (Land Title Regulation) of 1859 can be considered a product of these discussions. In compliance with the provision, if the vacant lots and barren lands were opened for agriculture, it was decided that the land would be given to the farmer free of charge by taking a low tribute from these lands and that a *ʿöşür/öşr* (tithe) would not be collected from the products obtained from these lands for a period of one year. The tithe exemption increased to two years in areas where the soil was stony.[155] The tithe regulations specific to cotton will be discussed in the next chapter.

Even if the Zirāʿat Taʿlīm-ẖānesi project was set aside, it should be underlined that the agricultural reform stirred and the modest infrastructure works in

[153] BOA, A.}MKT.NZD 194/49, 15 Muḥarrem 1273/15 September 1856; BOA, A.}MKT.NZD 208/17, 8 Cemāẕīyyü'l-evvel 1273/4 January 1857; BOA, A.}AMD 84/29, 29 Ẕi'l-ḥicce 1274/10 August 1858; and BOA, İ.MVL 386/16864, 10 Cemāẕīyyü'l-evvel 1274/27 December 1857. However, when it comes to 1872, it is seen that Mersin port had only four piers. BOA, İ.MMS 49/2098, 12 Rebīʿü'l-āẖir 1294/29 May 1874. While 162 ships visited Mersin in 1844, the number of them calling at the port shot up to 1,098 in 1875. While the total tonnage of these vessels was 9,234 in 1844, it was 138,975 in 1875. Asker and Arslan, "Küçülen Dünya," 89.

[154] A three-person *Zirāʿat Fırḳası* (Agricultural Committee) would be formed within the council in 1863, and this special commission would evaluate and decide on the proposals for the development of agriculture, determine the steps to be taken to encourage the production of (cash) crops with high commercial value, and compile the statistics on the production and consumption of agricultural and industrial products. This council reflected the ambivalent economic policy of the Ottomans, which was partially *liberal* and partially *mercantilist*. Güran, "Zirai Politika ve Ziraatte Gelişmeler," 220.

[155] Ibid., 225.

the Ottoman Empire were preserved. Because the British industrialists, who procured a significant part of the raw cotton from the United States, started to discuss how they could get out of a crisis that might fall if this source was cut off. So much so that this debate was even reflected in the *Cerīde-i Ḥavādiṯ* as of 1858. According to the news, (cotton) textile industrialists gathered in Manchester to find a solution to this predicament and established a company called the Manchester Cotton Association. The company aimed to undertake the business of growing cotton in suitable parts of the Ottoman Empire to transplant American cotton. It was principally intended to reduce the economic dependence of Britain on the United States. Although the Ottoman provinces had enough conditions to grow good-quality cotton, the quality of cotton produced outside of regions, such as Egypt, Damascus, Aleppo, Adana, and Izmir, was in urgent need of improvement, and the quantity was deficient as well. In addition, breeding studies for cotton plants were also necessary for these listed regions. For this, free American seeds would be distributed to Ottoman farmers, and the obtained crop would be purchased by the company in question at an affordable price. The company, which also took on the transportation costs, was planning to print one-hundred-thousand copies of a Turkish pamphlet on cotton production and distribute them to the farmers.[156] In the upcoming years, it would be seen that these moves were implemented, albeit not as planned. What was momentous here was that the potential to enlarge cotton cultivation was not due to the American Civil War alone. Turkey was already seen as a unique source of raw

[156] *Cerīde-i Ḥavādiṯ*, no. 884, 15 Ramażān 1274/29 April 1858, 1; Hammond, *The Cotton Industry*, 1:273; and Henderson, *The Lancashire Cotton Famine*, 36–37. In parallel with these, it was decided not to collect customs duty on cotton seeds to be sent by the CSA. BOA, HR.MKT 237/29, 24 Ramażān 1274/8 May 1858. The first cotton planting test of the CSA was carried out in Rhodes and this experiment using New Orleans cotton seeds was successful. US Congress, House, *Executive Documents: Printed by Order of the House of Representatives During the Third Session of the Thirty-Seventh Congress. 1862–'63. In Twelve Volumes* (1863), 573–74.

material long before the war.[157] A proof of this was that Thomas Clegg, an entrepreneurial manufacturer from Manchester, made exploratory tours in the Ottoman lands as well as in Africa and the Barbary States (today's Morocco, Algeria, Tunisia, and partially Libya). The places he deemed suitable for cotton cultivation in the Ottoman geography were Asia Minor, Thessaly, Macedonia, Syria, Cyprus, along with Egypt.[158]

The pre-war opportunity gave the agriculturalists a reason to increase cotton production in Anatolia and the Balkans. In addition, it had given time to every actor, large and small, to determine the necessary infrastructure works, legal regulations, and necessary strategies to escalate cotton production. There were massive differences between the "industrial rhythm" of Manchester and Lancashire, viz., England and the rhythm of the economic life of the Ottoman Empire. Despite the evolving Anglo-Turkish Convention since 1838—trade volume between England and Turkey had grown, and Lancashire's cotton products had gained a considerable market share—the Tanẓīmāt reform package seemed insufficient for the British.[159] Unless these differences were rectified, any plan written and drawn on paper had little chance of success. Besides, it should not be forgotten that the Ottoman Empire had received its first foreign debt due to the Crimean War (1853–1856) in 1854 and that the onerous burden of this external debt was on the budget.[160] In 1854, when India had 34 miles (approx. 55 kilometres) of rail, the first rail had not yet been laid for railway construction in western Anatolia.[161] This example of the government's

[157] İnalcık, "Osmanlı Pamuklu Pazarı, Hindistan ve İngiltere," 51–52.
[158] "Culture of Cotton in the Turkish Empire," *The Leeds Mercury*, 9 November 1858, 1.
[159] Cain and Hopkins, *British Imperialism*, 371. Beckert, *Empire of Cotton*, 128.
[160] After two decades of rapid borrowing, a moratorium would have to be declared in 1876. Karaman and Pamuk, "Ottoman State Finances in European Perspective," 620.
[161] Beckert, *Empire of Cotton*, 128.

debt burden and deficiencies in infrastructure revealed that the government often lacked the power to fully realise its aspirations and intentions.

In 1859, as a result of the negotiations in the Meclis-i Vālā-yı Aḥkām-ı ʿAdliyye and the Meclis-i Zirāʿat, it was decided to make infrastructure investments such as building the necessary roads for agricultural and commercial development along with making the rivers suitable for transportation. On top of that, loans were granted to the public for the sake of developing agriculture and trade and to make the distribution between regions and individuals fairer by reducing the tax burden.[162] In a letter written to Musurus Bey, it was stated that the Ottoman Empire could not realise its true potential in grain and cotton agriculture in this period.[163] Problems and desires were obvious. The ones that would shape the agricultural story of the Ottoman Empire from now on were the steps to be taken in the chaotic nature of society and the transforming world of the nineteenth century.

Representing the foreign press in Istanbul, *The Levant Herald* and the *Journal de Constantinople* also made publications in the direction of Britain's orientation towards the Ottoman Empire.[164] On the eve of the American Civil War, how Turkey could take advantage of this situation was narrated in an article published on 1 Receb 1277 [13 January 1861] in the *Rūz-nāme-i Cerīde-i Ḥavādiṣ* (Journal/Chronicle of Daily News/Events).[165] William Sandford's article appeared two issues later on 4 Receb 1277 [16 January 1861].[166] Subsequently, in all three issues of the *Rūz-nāme-i Cerīde-i Ḥavādiṣ* dated 27 Şaʿbān 1277 [10 March 1861],

[162] Güran, "Zirai Politika ve Ziraatte Gelişmeler," 225.
[163] TNA, FO 424/19, 8 August 1861.
[164] "Cotton in Turkey," *The Daily Journal*, 1 November 1860, 2; and Watts, *The Cotton Supply Association* (1871), 52–53. Although the *Journal de Constantinople* reflected the French point of view, according to the British, the publications on cotton agriculture were in line with the British. "Turkey," *The Times*, 15 October 1860, 11.
[165] *Rūz-nāme-i Cerīde-i Ḥavādiṣ*, no. 54, 1 Receb 1277/13 January 1861, 2.
[166] *Rūz-nāme-i Cerīde-i Ḥavādiṣ*, no. 56, 4 Receb 1277/16 January 1861, 1–2.

29 Şaʿbān 1277 [12 March 1861], and 3 Ramażān 1277 [14 March 1861], articles on cotton were published as well.[167] Local people used a backward technology compared to Britain. So, they may not have understood the use of new technologies. It would not be fair to characterise this narrative as a direct Orientalist approach. Even though it was a positive development that the articles were published immediately, that is, the press rolled up its sleeves to guide the literate public; if the British Vice-Consul Mr Sankey was correct, the reason why cotton was not exported from Urfa in the late 1850s was that the locals did not understand the separation of seeds from cotton bolls.[168] This meant that it would not be sufficient to eliminate the infrastructural deficiencies and make legal arrangements to increase cotton production in the whole country. Even if the dominant actors wanted positive results, the people's ignorance of the agricultural conditions and techniques of the period would affect all the equations they set up. Although it would be stated in the following years that the state should employ agricultural experts/engineers who would inform rural farmers and guide them in agrarian enterprises, this would not occur during the American Civil War. In the pre-Civil War period, the attempts of the state to develop agricultural knowledge and teach modern agrarian methods were largely inadequate.

[167] *Rūz-nāme-i Cerīde-i Ḥavādiṯ*, no. 93, 27 Şaʿbān 1277/10 March 1861, 1–2; *Rūz-nāme-i Cerīde-i Ḥavādiṯ*, no. 94, 29 Şaʿbān 1277/12 March 1861, 2; and *Rūz-nāme-i Cerīde-i Ḥavādiṯ*, no. 97, 3 Ramażān 1277/14 March 1861, 2.

[168] Sankey [Vice-Consul], "Turkey. Orfa. Report by Lieutenant-Colonel Sankey, British Vice-Consul at Orfa, on the Produce and Trade of the District of Orfa, in Mesopotamia," in *Abstract of Reports on the Trades of Various Countries and Places, for the Years 1857–58–59. Received by the Board of Trade (through the Foreign Office), from Her Majesty's Ministers and Consuls. No. 7* (1860), no. 2579, at 30:489.

CHAPTER 3

"KING COTTON" IN EXILE TO THE OTTOMAN LANDS

The American war is still lasting;

Like a terrible nightmare it leans

On the breast of a country, now fasting

For cotton, for work, and for means.

And humanity is calling.[169]

3.1 Financial and infrastructural arrangements for cotton cultivation

There are voices lost in official documents, inter-institutional correspondence, and newspaper columns.[170] These voices belonged to the cotton workers and their families who felt the adverse outcomes of the American Civil War and the depression of Britain's cotton industry, from the food they ate to the water they drank. They were sometimes reflected in amateur poems and folk songs. The poem "The Mill-Hand's Petition" in the epigraph above, which belonged to an unnamed cotton worker, was one of the lucky poems that found its place in the newspapers of

[169] W. C. [Unknown], "The Mill-Hand's Petition [Poem]," in *The Poetry of the Lancashire Cotton Famine (1861–65) Project* [The University of Exeter] (1866). Colonel Robert L. DeCoin explained the importance of cotton in 1864: "Of all the agricultural products in the world, cotton holds out the surest promise of profit and that laughing prosperity which makes the planter's heart glad, and his family happy in the enjoyment of plenty." Hayter, "Expanding the Cotton Kingdom," 225. Therefore, "King Cotton," which brought joy with its presence, became the king of disasters in its absence: ". . . Cotton is almost the life-blood of the country." Useful Knowledge Diffusion Society, *The British Almanac of the Society for the Diffusion of Useful Knowledge* (1862), 45. It is, in the end, the product of wealth for some and sheer injustice for others.

[170] The news with the closest tone to the poem given in the epigraph was published in *The Spectator*. The reaction of the public to the cotton bales brought to Farringdon, where the factories were closed for a long time, was reflected in the news as follows: "The people, who were previously in the deepest distress, went out to meet the cotton, the women wept over the bales and kissed them, and finally sang the doxology over the welcome importation. Imagine cotton becoming poetical, and people spontaneously raising a *Te Deum* because asked once more better incident is true as it stands, it would make a to toil!" *The Spectator*, no. 1872, 14 May 1864, 553. For statistics on those employed in cotton mills from 1835 to 1870, please see Evans, *The Forging of the Modern State*, 521.

the period. What made these poems remarkable was that they were so poignant even to the extent that they made the spiritual aches and pains of literature, with all their materiality, nothing. Not being able to be adequately nourished and bowing down when a child asks for something are terrible experiences, and there is no heart that these terrible things cannot touch, no reality that they cannot make visible. Such a phenomenon, which cannot be romanticised and aestheticised, is the subject of poetry because this poverty, which degrades the dignity of the worker and his family, touches everyone's hearts through verses or song. These poems, examples of which were rarely seen in the Ottoman press and literary life, except for war, were brought to light with *The Poetry of the Lancashire Cotton Famine (1861–65)*, an exemplary history-from-below project of the University of Exeter.

The main point that makes this project consequential, which demonstrates how strong the poetry culture was among the workers, is that it points out to the historian how the workers and their families experienced the Cotton Famine. Such a possibility can be compared to a "Wellsian machine for looking backwards through time."[171] Ideas are obtained from official documents, the exhibited narratives are looked at, and the detective profession is carried out with novel and challenging questions. However, in these poems, a self-referential reality is most exposed. The explanation given by official documents to the historian may be wrong or biased, or the historian may deliberately falsify the explanation. For this reason, the historian who is more involved with the official documents has a more substantial hand than the one who does not but also risks being a partner in sin. More precisely, sometimes the historian may repeat the falsification of documents. Therefore, with poems whose almost only problem is to get lost in a subjective perspective, it would be best to

[171] Collingwood, *The Idea of History*, 252.

enter a highly political subject, such as the American Civil War, with the humility to accept that it is impossible to avoid repeating the misrepresentation of documents to a certain extent.

The principal reason for the intensity of emotion and desperation in the poems about the cotton shortage was that Britain had been dependent on the United States to supply raw cotton for a long time. The cotton textile industry has been so crucial to the British economy that some economic historians, such as Joseph A. Schumpeter, argue that British industrial history can even be reduced to the history of a single commodity, namely the history of cotton.[172] Therefore, the repercussions of the outbreak of the American Civil War were so dramatic both for employers in Britain and for those who worked in this sector and took their bread home. Because it was estimated that there were about four million people whose sustenance depended on the wheels of the cotton mills, and this corresponded to one-sixth of the population. For those who would like to have an idea about the place of cotton production in Britain's foreign trade, it is sufficient to remind that one-third of its exports in 1859 were composed of cotton manufactures.[173] Just before the start of the war, that is, at the moments when its footsteps were heard, it was discussed how Britain would be affected if a war broke out. For example, Andrew Cassels, the Chairman of the Manchester Chamber of Commerce, emphasised in an interview with Sir Charles Wood that Lancashire's cotton supply was in danger of being cut off by events in the United States. Yet, based on the information given by Cassels, 80%

[172] Deane, *The First Industrial Revolution*, 87. There have been stereotypical commodities that are claimed to have shaped and transformed every century, especially in economic terms. As such, it is cotton for the nineteenth century, as has been repeatedly mentioned by many: "Who says Industrial Revolution says cotton." Hobsbawm, *Industry and Empire*, 56.
[173] Blanc, *Letters on England* (1867), 1:72. Britain was not alone in this situation. Although the British cotton industry took the biggest blow, it should not be forgotten that 75% of cotton spinning operations in Moscow stopped in 1863 as well. Beckert, *Empire of Cotton*, 248.

of cotton imports were made from the United States in 1861.[174] Names like John Bright and Thomas Bazley have also warned businessmen in Lancashire of the looming danger and encouraged them to seek less costly ways to produce raw cotton in other regions of the world, such as India, the West Indies, Brazil, and Egypt, to reduce their dependency.[175] With the menace was on the horizon, cotton manufacturers from Lancashire first formed the CSA in 1857, and three years later, the Manchester Chamber of Commerce and the Manchester Cotton Company.[176]

It is not necessary to be a soothsayer to notice such a problem beforehand. Friedrich List, the renowned political economist of German origin, predicted in his letter dated 29 July 1827 to a friend that Britain would turn to other source countries for cotton supply:

> Whilst the Southerners destroy the fruits of their labour by self-competition, it is quite certain that England is looking about for supply to other countries, standing more under their command than the United States. They intend to encourage Brazil and other South American states in this business. The downfall of the Turkish Empire, which in all probability, if not overthrown from abroad, must sink under its own weight, will moreover bring vast cotton countries under their suzerainty. In such a case, they probably aim at Egypt and Minor Asia, not only in this respect but to get the key to the Red Sea and consequently to East India.[177]

The return of cotton to its glorious days in the Ottoman Empire coincided with the decades after 1840, especially when the American Civil War began.[178] It was emphasised in various studies that cotton production in the eighteenth century

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[174] Harnetty, "The Imperialism of Free Trade," 71. The debate as to whether the supply of new sources for raw cotton is a necessity goes back to the 1850s; for further details, please see Porter, "Examination of the Recent Statistics of the Cotton Trade in Great Britain," *Journal of the Statistical Society of London* (1850): 305.
[175] Henderson, *The Lancashire Cotton Famine*, 36; and Hyam, *Britain's Imperial Century*, 54–55. From 1861 to 1862, Britain's raw cotton imports from the United States fell from 65% to 4%. Powell, *Losing the Thread*, 26.
[176] Logan, "India—Britain's Substitute for American Cotton," 47.
[177] List, *Life of Friedrich List and Selections from His Writings*, 268.
[178] In this period, the consumption of cotton textile manufactures also increased. For the state of cotton textiles within the context of Ottoman crafts before and in the early nineteenth century, please see Pamuk, "Osmanlı Zanaatlerinin Yıkılışı," 77.

diminished in the Ottoman Empire until the American Civil War.[179] It is said that there was a different picture in the cotton sector before the Industrial Revolution. Long existing in the Near East, cotton weaving was a flourishing branch of manufacture, especially from the sixteenth to the middle of the eighteenth century. However, with the widespread mechanisation in this branch with the Industrial Revolution in Europe, mainly in Britain, (Near Eastern and equivalent) cotton fabrics became manufactured products, not imported.[180] Thus, the glorious days were left behind; moreover, the transfer of new agricultural methods and newly invented machinery in Europe could not be achieved. This point indicates that the tradition is most dominant in operation and use of the land. So much so that the agricultural literature of the early Republican period also connects the existing crop to the fertile soil.[181] Nevertheless, it was underlined that the necessary methods were not used to increase the yield or prevent the soil from getting tired. The ploughing of the fields was done with a primitive type of plough requiring simple workmanship. There was no industrial fertilisation as well.[182] This brief portrait of the period demonstrates that some of the conditions in the eighteenth century partially persisted into the nineteenth but that this also made current yields unsustainable due to rapidly developing technology primarily because of the Industrial Revolution.

When it comes to nineteenth-century agricultural techniques that have been wholly or partially neglected by the Ottoman Empire, although propagandist language sometimes raises its voice, it is not correct to accuse all early Republican

[179] For one of them, please see Farley, *The Resources of Turkey*, 55. For notes taken by the French vice-consul on the surge in cotton cultivation in Asia Minor during the American Civil War, please see Dutemple, *En Turquie d'Asie*, 270.
[180] Genç, "18. Yüzyılda Türkiye'den Fransa'ya Yapılan Pamuklu İhracatı ile İlgili Bir Araştırma Hakkında Düşünceler," 152.
[181] Turgay, *Türk Ziraat Tarihine Bir Bakış*, 100.
[182] Ibid.

agricultural literature of presenting an ideological picture. For example, in *Türk Ziraat Tarihine Bir Bakış*, it was shown that the same problems were expressed by including a selection from the newspapers of the period. The fact that this particular narrative preference of early Republican Turkey sometimes attributed the first cause of all problems to superstition shows that it preferred an essentialist interpretation of events as opposed to economic reductionism. But not mentioning superstitions for fear of appearing essentialist is just as problematic as attributing the first cause of everything to superstitions. The insistence that the "tools" are indispensable in agriculture, even in the leading publications of the 1840s, [183] can be presented as evidence of how primitive the current agriculture was in the geography. Considering the conditions, the cotton cultivation and production of the Ottoman Empire during the American Civil War will come to the fore as a test with a general deprivation. The size and importance of the demand towards the Ottoman Empire should be understood first to understand the extent of this deprivation.

The cessation of raw cotton exports from the southern United States as a result of the American Civil War not only caused an upsurge in the prices of both cotton and cotton products in Britain but also brought along a huge unemployment problem.[184] Thus began a wild race in search of new resources.[185] Contrary to expectations, although there were discussions that such a crisis could break out in Britain, it was caught unprepared for the crisis.[186] Therefore, it is not reasonably

[183] Turgay, *Türk Ziraat Tarihine Bir Bakış*, 116.
[184] Panza, "Globalisation and the Ottoman Empire," 74.
[185] Beckert, *Empire of Cotton*, 251; and Eldem, "İktisat Tarihiyle Sanat Tarihinin Bir Kesişmesi," 73. The Ottoman lands were at the forefront of the geographies where eyes were turned. "Cotton Supply," *The Journal of Gas Lighting, Water Supply, and Sanitary Improvement* (4 June 1861): 381; and "The Manchester Cotton Supply Association. Annual Report for 1861," *The Merchants' Magazine and Commercial Review* (November 1861): 473.
[186] Jim Powell quotes Leone Levi: "When the fatal contest between the United and Confederated States of America unfortunately commenced, it found us as unprepared as ever to meet the dire calamity." Powell, *Losing the Thread*, 29.

possible for demand to be one of the main actors in cotton production. It is only a driving force during the crisis. The real actors that played a prominent role during the crisis were the steps taken before the Cotton Famine erupted. Investments, technology transfers, scientific research, established networks, and pioneering initiatives and enterprises were precedents. This section will dig into how when not only governments but also private enterprises impose unrealistic policies without taking local dynamics into account, all these result in the failure of private initiatives and frustration for local people.

Viscount Stratford de Redcliffe (Stratford Canning) said in the debates held in the British Parliament in 1861 that a large part of Turkey's lands were quintessential for cotton cultivation.[187] It was natural to turn the eyes to the Ottoman Empire, because the Ottoman geography, namely western Anatolia and Macedonia, was one of the most crucial cotton import centres for Europe from the twelfth century to the middle of the eighteenth century.[188] The *Cerīde-i Ḥavādiṯ* also asserts that no country in the world is as suitable for cotton cultivation as Turkey, yet it remains derelict, whereas Tırhala (north-western Thessaly), Thessaloníki, and Sérres in Rumelia, and many localities in Anatolia and Arabia are suitable for cotton cultivation. It also underlines the weight of the taxes in the country compared to the United States and explains that the civil war situation there should be taken advantage of.[189] The reality that defiantly stood in the face of all this excitement was

[187] 164 Parl. Deb. (3d ser.) (12 July 1861) cols. 778–89. There is also a geographical point to be noted in this rich land discourse. Soil-rich and fertile lands are primarily found in alluvial basins and plains, and they are not very large compared to Turkey's overall surface area and are scattered around the country. Sarc, *Türkiye Ekonomisinin Genel Esasları*, 1:49.

[188] Beckert, *Empire of Cotton*, 41. For this reason, there were frequent reports in the foreign press that Turkey was suitable for cotton cultivation just before and during the American Civil War. "Syria Available for Cotton Growing." *The Leeds Mercury*, 22 September 1860, 7; and "Cotton in Turkey," *The Liverpool Mercury*, 1 November 1861, 1.

[189] "Amerika'da esāretiñ laġvıyle şimāl ve cenūb ahālīsi beyninde ṣulḥ u ṣalāḥ teḳarrür iderek her şeyʾ heyʾet-i aṣliyyesine ricʿat eyleyinceye ḳadar Memālik-i Maḥrūse küllī pamuk ḥuṣūle getürmeğe başlıyarak tüccār-ı ecnebiyyeden bir çok müşterīler peydā itmesi ve fabrikacıları kendü maḥṣūlātını

that Turkey had severe problems to overcome. Due to the compulsory military service, the men of the Muslim population engaged in agriculture were taken from their fields and, in a sense, turned into consumers for a long time. In other words, the already scarce labour force[190] was being made harder to come by. As a result of banditry, the security needed by agriculture could not be provided.[191] According to Gabriel Tarde, trust is essential for taking the first steps in any economic relationship. Trust, like invention, creates new groupings, covering the economy in a way that is then validated by repetition.[192]

The problems of the state in tax collection could not be solved, and the infrastructure deficiencies could not be eliminated. Most of these infrastructure deficiencies were related to transportation. Products or crops were reaching customers, intermediaries, or speculators under arduous conditions. There were no establishments to provide agricultural education and information to the subjects, and educated people or experts could not be sent to regions within a systematic state policy. There were also no credit institutions that could meet the needs of all

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istiʿmāle meʾlūf eylemesi lāzımdır." [Until all things are restored by the abolition of slavery in the United States and the establishment of peace between the peoples of the North and South, the Ottoman Empire must begin to produce large quantities of raw cotton, attracting large numbers of customers from foreign traders and accustoming the manufacturers to using its own crops.] *Cerīde-i Ḥavādiṯ*, no. 94, 29 Şaʿbān 1277/12 March 1861, 2.

[190] *The Guardian* also mentions the labour shortage. "Cotton in the Sultan's Dominions," *The Guardian*, 16 January 1861, 4.

[191] René du Parquet, who was hired at the Istanbul branch of the Ottoman Bank, enunciated in the text that he conveyed his impressions of Istanbul, that there was nothing more pathetic than the situation of the Turkish peasants. According to Parquet, while the peasants around Izmir could live quite well, despite cholera and locusts, by planting olive trees, cultivating silkworms, and picking vines called *çavuş*, he wrote that the two afflictions that haunted them incessantly condemned them to the most dreadful poverty. One of these two troubles was the Greek brigand, and the other was the Turkish soldiers sent after these brigands. Parquet, *İstanbul'da Bir Yıl*, 35. The reason why the soldiers were a nuisance to the people was that they were malnourished and could not get a decent salary, so they engaged in looting and extortion. Parquet, *İstanbul'da Bir Yıl*, 37. Public order problems are also found in British records. For example, although regions such as Aleppo were considered suitable for cotton cultivation, there were security problems due to the lack of the central government, and numerous complaints were made about this situation. Skene [Consul], "Turkey. Aleppo. Report by Mr. Consul Skene on the Trade of Aleppo for the Year 1861," in *Commercial Reports Received at the Foreign Office from Her Majesty's Consuls between January 1st and June 30th, 1862* (1862), no. 3060, at 59:345; and Issawi, *The Fertile Crescent*, 347.

[192] Latour and Lépinay, *The Science of Passionate Interests*, 39.

producers. However, since cotton cultivation requires both intensive labour and technology, it is almost impossible to maintain this business without credit or cash. Agriculture needs encouragement and protection. During the reign of Abdülmecid, even though the establishment of the *Zirāʿat Neẓāreti* (Ministry of Agriculture), the setting of agricultural directorates, the granting of a small amount of credit to the farmer, and the formation of an agricultural school and a model farm for the first time as well as the cultivation of cotton there, no remarkable success has been achieved.[193] This is the most classical framework any historian can draw. It has become the general tendency of both the press of that period and current academic studies to highlight the education and infrastructure problems. In order not to obscure the financial situation, infrastructure problems will be mentioned again by using new sources. Afterwards, in detail, scientific and technological input with direct and indirect effects will be discussed.

Infrastructure deficiencies suggested that the Ottoman Empire was a victim of its colossal landmass and that its economy, transportation, technology, and labour mobility remained idle being overwhelmed by tremendous distances. Thus, there were profound asymmetries and inequalities between the regions, and a structure divided in terms of different development levels began to emerge in the Ottoman geography. Even though there were many well-suited areas for cotton cultivation and raw cotton production in the Ottoman Empire, this was the reason why the Aegean region and the south of the Balkans had come to the fore. This divided structure also determined the central state practices and the relationship of the central state with the

[193] Karal, *Osmanlı Tarihi: Islahat Fermanı Devri (1856–1861)*, 6:286. Nizamettin Turgay cites four primary reasons that hinder the development of agriculture: (i) farmers' ignorance, (ii) lack of manual labour, (iii) lack of working capital, and (iv) lack of means of transportation. Turgay, *Türk Ziraat Tarihine Bir Bakış*, 100–105. Turgay prioritises educational problems in the hierarchy he established in parallel with the education policies of the early Republican era. However, the main argument of this thesis argues that the complex structure of intertwined problems does not make hierarchy possible.

economy and society. Notwithstanding all these, with the encouragement and guidance of both domestic and foreign actors, the government has taken steps to increase cotton cultivation in the country. When the remedies for the development of cotton cultivation written in the statement and appendix of the Meclis-i Meʿābir, published in 1861, are scrutinised, one can easily see that long studies and discussions continued for the development of cotton agriculture. A detailed discussion was held in the Meclis-i Meʿābir about the reasons why imperial cotton production could not compete with American and Egyptian cotton and the measures that could be taken to improve cotton cultivation, and all of these were reported. This statement reflected the Ottoman Empire's endeavours to revive the production and export of cotton, which was a pivotal export item until the nineteenth century. Still, later on, its production and exports declined partly attributable to competition from American and Egyptian cotton.[194]

The reasons for the weak market competitiveness of the Ottoman Empire were discussed, and a detailed problem analysis was tried to be put forward to solve this situation by underlining that while Egyptian cotton was sold for 110 francs per bale in Marseille, Izmir cotton was sold for 68 francs. In this framework, a tax would be determined on real estate and per acre instead of the tithe for a period of ten years for cotton produced, which was deemed to be the source of *ṣervet-i fevḳa'l-ʿāde* (tremendous wealth), no matter what variety of cotton it was. The tithe would not be taken for a year or two when the unploughed lands were opened for cotton cultivation. Those who reopened their lands for cotton cultivation would be exempted from the tithe for five years. *Gayr-i mezrūʿ arāżī* (land that has not been cultivated) so far would be exempt from the property tax for five years. The export

[194] Güran, *19. Yüzyıl Osmanlı Tarımı Üzerine Araştırmalar*, 51.

tax would be re-regulated and made more equitable. The roads of villages and towns would be put in order and repaired. There would be customs exemption for the import of machinery used in the selection and cleaning of cotton seeds—*pamuk toḥumununñ tefrīḳ ve taṭhīrine maḫṣūṣ olan makineler*. The state would purchase some samples of these machines. Announcements and pamphlets would be printed and distributed. Instructions would be sent to the duty officers of the regions concerned with the proper planting of the selected foreign seeds. Medals or decorations would be conferred to 'quality' cotton growers to encourage them further. Regional exhibitions would be opened in the areas where cotton was planted, and awards would be given for the highest-quality cotton. Lastly, *evāmir-i şedīde* (strict/firm/severe orders) would be issued immediately to ensure that animals do not damage the cultivated crops.[195]

Besides, there is an emphasis on mechanisation. It is underlined that one person can handle the work of 400 people with the help of steam power in the United States. Unlike in the United States, there were no commercial banks in the Ottoman Empire that could be used by agriculturalists for credit opportunities, and industrial fertilisers were needed in the Balkans and Anatolian geography, which did not have more fertile lands than the United States or Egypt (the Nile and its basin), which made a similar yield possible. Regarding cotton cultivation, (scientific) agricultural knowledge, in the functional sense, was almost non-existent. Due to the ignorance of the shepherds, precautions had to be taken against the damage their animals were

[195] BOA, İ.MVL 451/20162, 6 Ṣafer 1278/13 August 1861. On the execution of the facilities, please see BOA, A.}MKT.MHM 232/56, 18 Ṣafer 1278/25 August 1861; and "Commercial and Miscellaneous News," *The Economist*, 1 November 1862, 1215. In an article in the *Cerīde-i Ḥavādiṣ* on cotton cultivation, recommendations were made, such as exempting cotton exports from customs duty, making it compulsory for the Caucasian immigrants to plant cotton on the lands allocated to them, abolishing the tax on cotton altogether, or granting exemption from the property tax for ten years for uncultivated lands suitable for cotton farming. *Cerīde-i Ḥavādiṣ*, no. 97, 3 Ramażān 1277/15 March 1861, 2; and Kasaba, *The Ottoman Empire and the World Economy*, 68.

causing to the crops. Primitive agricultural tools and equipment were being used, there was a shortage of waterways, and the preservation of the harvested crops was also problematic.[196] On top of these, there was a shortage of workers, and the wages of existing workers were high. The tax issue was discussed at length as well. In the United States, the taxes on cotton, particularly the export tax, were relatively much lower, and this comparative (dis)advantage engendered a significant impediment for the Ottoman Empire. In addition to recurrent complaints about the scourge of the tithe, the way it was collected, that is, the duly waiting for the *mültezim* (tax farmer) to arrive at the field, was damaging the crop.[197] Despite this, some bureaucrats were reluctant to take a step on the tax issue. However, new tax regulations could be more efficiently endorsed when the cotton trade developed. The benefits from previous experiments with successful cotton cultivation were suspected to be short-term from small quantities of cotton.[198] The scepticism and prudence in the approach of the document indicate that the members of the Meclis-i Meʿābir, which mainly consists

[196] One of the issues that British newspapers complained about the most was the wrong steps taken by the peasants when it came to cotton farming. The crop was planted and harvested at the wrong time and in an inappropriate way. Turgay, *Türk Ziraat Tarihine Bir Bakış*, 136.

[197] "ʿÖşrüñ işbu uṣūl-i taḥṣīliyyesi maʿlūmdur-ki maḥṣūlātıñ tabīʿatına göre az-çok aḥvāl-i müteʾessire īḳāʿ itmeğe müsāʿid oldığından meselā yerli pamuğı toḫum kabukları açılmazdan evvel bir defʿada cemʿ olunabilecekden mülteziminiñ teʾḫīrātı mülāḥaẓası dahi zerʿine mānīʿ-i ḳavī olamaz ise de Amerika ve Mıṣır pamuklarıyle ḳıyās olunamıyacağı bedīhīdir bunlar *à la franca* Eylül'den Teşrīn-i Sānī'ye ḳadar ve Kānūn-ı Sānī'de bile ḥāṣıl olmakda oldığını açılmakda olmasıyle der-ḥāl pamuğı alınmaz ise yere düşüb çarçabuk fenā bulur." [It is known that this collection method of the tithe (tax) is conducive to causing a more or less (negative) effect based on the nature of the crop; for example, while the local cotton can be harvested/collected at once before the seed pods are opened, the delay of the tax collector cannot prevent its agriculture, but it is clear that their quality cannot be compared with the American and Egyptian kinds of cotton, and these are grown from September to November and even in January, and if the cotton of those whose bolls are opening is not removed immediately, they will fall to the ground and quickly become putrid.] BOA, İ.MVL 451/20162, 6 Ṣafer 1278/13 August 1861. In an economy mainly based on agriculture, the *aʿşār* and *aġnām* taxes constituted a vital part of the state income. Still, there were frequent collection problems that also caused seasonal and product-related irregularities. Therefore, it was not easy to regulate these fixed and unreliable taxes. Eldem, *135 Yıllık Bir Hazine*, 25.

[198] ". . . maḥāll-i sāʾirede ecnebī pamuğunuñ ḥuṣūli tecrübe ve netīceye tevaḳḳufdur." [. . . the harvest of foreign cotton in various places depends on experience and outcomes.] BOA, İ.MVL 451/20162, 6 Ṣafer 1278/13 August 1861. The Ottoman Empire's reluctance towards tax regulations in the ways the foreign actors demanded was also seen in some tax changes. In 1864, it was decided to charge an export tax on raw cotton fibres, not an export tax on cotton bolls. In other words, the Ottoman Empire somehow maintained its autonomy in tax regulations. BOA, A.}MKT.MHM 303/7, 8 Muḥarrem 1281/13 June 1864.

of the so-called experts in the field of agriculture, approach the subject matter more scientifically than the British actors in the region, contrary to the outdated narrative of Ottoman bureaucracy and history of science. While many foreign actors generally fathomed the rules and conditions of cotton cultivation as almost religious creeds and could not transcend the narrow merchant mentality, the members of the Meclis-i Meʿābir thought that many variables were not included in the equation.[199] This superficiality was notably embodied in the CSA's attitude. From this point of view, importing cotton seeds from abroad along with the improvement of local seeds and bringing vacant lands into cotton agriculture could be seen as actions in which the state willingly participated.

The CSA's plan was pretty straightforward on paper. It was to distribute an exquisitely detailed planting proposal written on cotton cultivation together with foreign (exotic) cotton seeds to regions where it expected potential for cotton production and to encourage local people to cultivate cotton in those places. It was also interested in technology transfer to the extent that it had the power and capability to forge new partnerships and collaborate with local actors. Jim Powell humorously sums up the CSA's idiosyncratic strategy: "The CSA produced a grow-your-own cotton kit and was granted the use of British consular offices to promulgate it. There was no shortage of suitable recipients."[200] Even though the CSA's strategy

[199] It should be noted, however, that the statement and its appendix are a repetition of the French report prepared by Mr (Louis) Tassy. BOA, İ.MVL 451/20162, 6 Ṣafer 1278/13 August 1861. The developments in this document are shared with the investors more straightforwardly in the founding news of the Ottoman Cotton Company. The government would waive all the tithe and taxes on the new lands devoted to cotton cultivation for five years in line with the news. A more moderate tax would be implemented instead of the tithe. It would allocate financial means to construct (or repair) the necessary roads and bridges and cooperate with the local people and issue all contracts and other legal documents free of charge, except for the small stamp duty on paper. Apart from these, attention is drawn to certain privileges specific to companies. "The Ottoman Cotton Company (Limited)," *The Times*, 9 May 1863, 3.

[200] Powell, *Losing the Thread*, 35. The CSA's guidelines on cotton storage and planting, which Powell refers to in a cynical language, are also published in the period's newspapers. "Chronique locale et faits divers," *Journal de Constantinople*, no. 1501, 16 March 1861, 3. These instructions included details on how many centimetres deep the cotton seed should be planted.

was sceptical and prudent from time to time, the Ottoman government was one of these "suitable recipients" as well. Coming back to the CSA, it was in close communication with the bureaucratic structures of the Ottoman Empire concerning cotton cultivation and production.

The CSA, relying on its connections and strength, did not have the opportunity to adequately study the reason for the increase in raw cotton production in the United States and the decline in other regions of the world. This question was not brought up with the aftershock of the crisis. Nevertheless, there were profound differences between other geographies and their social structures—an unfortunate axiomatic situation that still holds true today. Furthermore, cotton cultivation and production itself was a complicated agricultural business. Suppose the CSA had been able to communicate with scientists or experts studying the chemistry of the soil while developing its strategies for cotton production. In that case, the cotton-growing soil could be discovered to be nitrogen-poor compared to potassium and phosphorus, thus requiring more advanced irrigation techniques and industrial fertilisers. Publications could have been distributed not only on the fight against harmful pest species but also on invading weed species, and it was acted on the principle that the same technique was not correct for the preparation of every field. Moreover, it could have paved the way for the articulation of *applied* knowledge as well as traditions into modern scientific studies that were being institutionalised in those years. Instead, everything has been tried to be reduced into a single formula. The regulations in tax policies, the improvement of transportation facilities, and the purchase of modern machinery represent the rough three pillars of this formula.

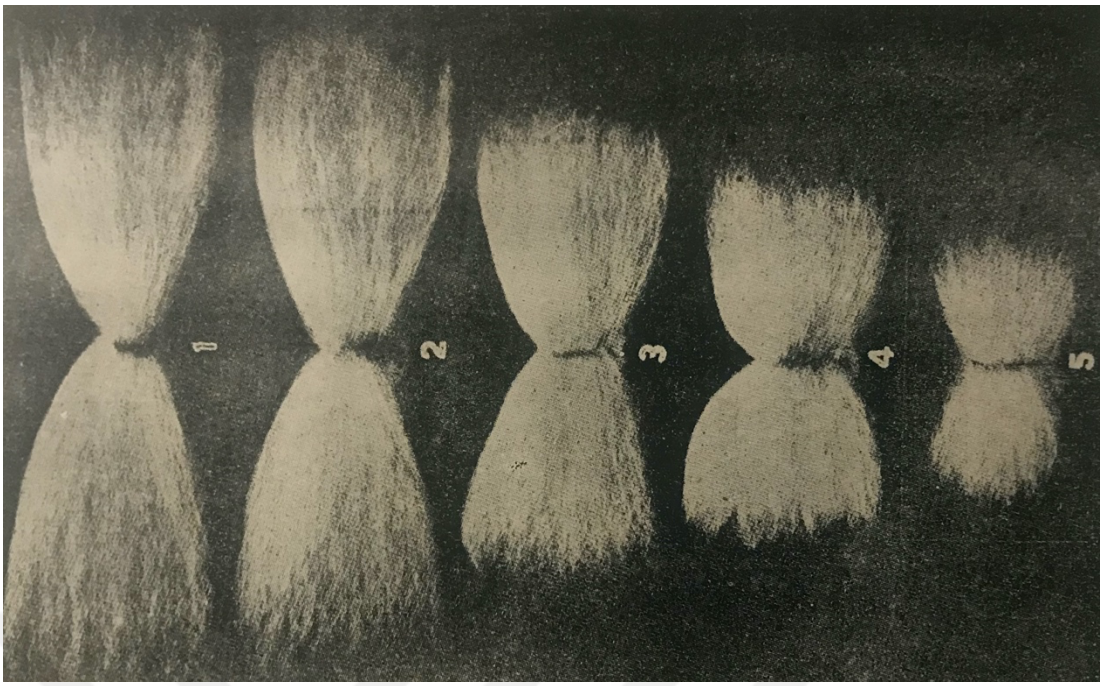

Figure 2. The different varieties of cotton plants according to their fibres[201]

Although not included in these three pillars, the departure point is, of course, the distribution of cotton seeds. Some of the regions where cotton seeds were dispatched, at least once, were as follows, as shown in Table 1 below. Most of these cotton seeds were American exotic seeds, usually imported from Britain (see Figure 2 above for different types of cotton plants—American varieties have relatively longer staple lengths in terms of their fibres).[202] Along with the government, the CSA also distributed free American seeds to facilitate cotton cultivation in communication and cooperation with British speculators and consular staff.[203] Domestic and foreign

[201] Âbidin, *Pamuk: İstihsalden İstihlâke Kadar*, 6. The different varieties of cotton plants are shown according to their staple lengths, numbered one through five [1: Sea Island cotton (*Gossypium barbadense*), 2: Egyptian cotton (also associated with *Gossypium barbadense*), 3: Upland cotton (*Gossypium hirsutum*), 4: short-staple Upland cotton, and 5: Asian cotton].
[202] New Orleans seed was considered by the government to be better. BOA, İ.HR 203/11664, 2 Cemāẕīyyü'l-āḫir 1280/14 November 1863; "Cotton in Turkey," *The Hertford Mercury and Reformer*, 20 December 1862, 4; and BOA, İ.DH 531/36835, 21 Receb 1281/20 December 1864. Most of these seeds were distributed free of charge to the public. "Chronique," *Journal de Constantinople*, no. 3292, 22 January 1864, 3. According to the *Journal de Constantinople*, which shared an article from *The Cotton Supply Reporter*, the seed distributed free to the public in 1864 reached 90,000 ḳıyyes (about 115.2 tons). "Constantinople," *Journal de Constantinople*, no. 4461, 2 September 1864, 1.
[203] "Cotton from Turkey," *The Manchester Courier and Lancashire General Advertiser*, 12 December 1863, 8. The reason why American seeds were so preferred was that they yielded better crops than domestic cotton seeds. In addition, especially New Orleans seeds were more suitable for the soil and

entrepreneurs helped smaller farmers who were struggling. From time to time, they scattered the excess seed in their hands. Newspapers state that they have been particularly successful in regions such as Macedonia and Izmir. The biggest reason for this was that the economic life was more vibrant there than in the rest of the country, and other forces that were difficult to predict and dominate, such as soil type, climatic conditions, precipitation regime, insects, public order, and the people's approach to foreign actors, were relatively under control. This control was sometimes achieved by effort, sometimes just by chance. From time to time, individual efforts, such as the initiatives of the Governor of Edirne, Kıbrıslı Mehmed Emin Pasha, came to the fore. After the successful trials of cotton planting in Edirne, Mehmed Emin Pasha requested 12 tons of American cotton seeds through Musurus Bey, the Ottoman Ambassador in London.[204] It was a request that cannot be underestimated for the period of 12 tons of cotton seeds, and his request was immediately fulfilled. Because of this effort, Kıbrıslı Mehmed Emin Pasha won the appreciation of foreign actors in the period's newspapers. Thus, his name entered among the most prominent local figures. He was perhaps one of the most cited domestic actors for his achievement during these years.

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climate. Watts, *The Cotton Supply Association* (1871), 58. It is also seen that Sea Island cotton is praised from place to place. BOA, İ.MVL 451/20162, 6 Şafer 1278/13 August 1861. Besides, the length of New Orleans cotton was two and a half to three feet (76.2 to 91.44 centimetres), sometimes even four to five feet (121.92 to 152.4 centimetres), while the product of the native seed could only exceed one foot (30.48 centimetres). The native plant yielded 10 to 30 bolls, while the New Orleans breed yielded up to 50 to 80 bolls. Cheetham, "On the Present Position and Future Prospects of the Supply of Cotton. Asia Minor and Turkey in Europe," *The Journal of the Society of Arts* (27 February 1863): 257–58. For these reasons, this seed was also preferred to the Egyptian cotton seed—viz. Jumel (or Mahò) cotton. BOA, A.}MKT.MHM 321/69, 28 Receb 1281/27 December 1864. Nonetheless, this did not mean that no Egyptian cotton seeds were preferred. It is also discerned that the Egyptian seeds are distributed to the farmer. BOA, A.}MKT.MHM 303/7, 20 Şevvāl 1281/18 March 1865. In the same year, another document mentioning that American seed is better than the Egyptian one can be regarded as an indication of lack of consistency. BOA, C.İKTS 4/178, 25 Ramażān 1281/21 February 1865.

[204] BOA, HR.SFR.3 69/43, 23 October 1862; and "Demand for Cotton Seed for Turkey," *The Dundee Courier*, 19 November 1862, 1. The CSA presented a "medal of honour" to Kıbrıslı Mehmed Emin Pasha for his efforts mentioned above. "Chronique," *Journal de Constantinople*, no. 4595, 6 February 1865, 2.

Table 1. The Dispatch of Cotton Seeds in the 1860s[205]

Adana	Denizli	Salonica (Thessaloníki)
Ankara	Edirne	Silivri
Aydın	Gallipoli	Skopje
Biga (in Çanakkale)	Harput	Smyrna (Izmir)
Bosnia and Herzegovina	Izmit	Syria
Bursa	Jerusalem	Trablusgarp (Tripolitania)
Crete	Karahisar (in Afyon)	Viranşehir (in Urfa)
Cyprus	Kütahya	Yanya (Ioannina)
Damascus	Macedonia	Yenice-i Karasu (Genisea)

One of the decisions taken to facilitate cotton cultivation was to abolish the customs duty on the import of machinery to be used in cotton farming, to separate the cotton from the seed and clean it later.[206] The target was not smallholder peasants

[205] BOA, A.}MKT.MHM 264/31, 6 Ẕi'l-ḥicce 1279/25 May 1863; BOA, A.}MKT.MHM 256/79, 4 Ramażān 1279/23 February 1863; BOA, A.}MKT.MHM 265/56, 21 Ẕi'l-ḥicce 1279/9 June 1863; BOA, TŞRBNM 12/53, 3 Şaʿbān 1280/13 January 1864; BOA, A.}MKT.MHM 258/43, 8 Şevvāl 1279/29 March 1863; BOA, A.}MKT.MHM 293/24, 16 Ramażān 1280/24 February 1864; BOA, A.}MKT.UM 547/58, 10 Ramażān 1278/11 March 1862; BOA, A.}MKT.MHM 247/74, 2 Cemāẕīyyü'l-āḫir 1279/25 November 1862; "Cotton Growing in Asiatic Turkey," *The Guardian*, 11 June 1864, 5; Issawi, *The Fertile Crescent*, 276; BOA, A.}MKT.MHM 252/92, 24 Receb 1279/15 January 1863; "Cotton Supply Association," *The Guardian*, 10 November 1865, 3; BOA, A.}MKT.MHM 292/93, 9 Ramażān 1280/17 February 1864; BOA, A.}MKT.MHM 263/45, 8 Şevvāl 1279/29 March 1863; *Taṣvīr-i Efkār*, no. 193, 2 Ẕi'l-ḥicce 1280/9 May 1864, 1; Moore [Consul], "Inclosure in No. 2. Précis of Reports upon the Cultivation of Cotton. Baghdad, Moossul, Bussorah, Jerusalem, Jaffa, and Caiffa and Acre. Jerusalem. His Highness Namick Pasha, Governor-General," in *Turkey. Circular to Her Majesty's Consuls in the Ottoman Dominions Regarding Cotton Cultivation; together with a Summary of Their Replies* (1865), no. 3498, at 57:9; BOA, MVL 647/14, 13 Ẕi'l-ḳaʿde 1279/2 May 1863; BOA, A.}MKT.MHM 255/3, 17 Şaʿbān 1279/7 February 1863; "Cotton from Turkey," *The Manchester Courier and Lancashire General Advertiser*, 12 December 1863, 8; BOA, A.}MKT.MHM 248/42, 7 Cemāẕīyyü'l-āḫir 1279/30 November 1862; BOA, A.}MKT.MHM 257/32, 13 Ramażān 1279/4 March 1863; BOA, A.}MKT.MHM 295/22, 15 Şevvāl 1280/24 March 1864; Issawi, *The Fertile Crescent*, 283; BOA, A.}MKT.MHM 295/40, 18 Şevvāl 1280/27 March 1864; BOA, A.}MKT.MHM 352/63, 16 Ẕi'l-ḳaʿde 1282/2 April 1866; BOA, A.}MKT.MHM 295/70, 20 Şevvāl 1280/29 March 1864; and BOA, A.}MKT.MHM 293/80, 28 Ramażān 1280/7 March 1864.

[206] ". . . fi'l-vāḳiʿ pamuk zirāʿati ḥaḳḳında şāyān buyurulan müsāʿadāt-ı seniyyeye dāʾir tanẓīm ve iʿlān kılınmış olan beyān-nāmede pamuk toḫumlarına dāʾir bir şeyʾ derc ve taṣrīḥ olunmamış ve bunlarıñ dahi muʿāfiyyet-i meẕkūre taḥtına dāḫil olması īcāb-ı maṣlaḥatdan bulunmuş oldığından makine ve edevāt-ı sāʾire miṣillü bunlarıñ dahi muʿāfiyyet-i meẕkūre tārīḫinden iʿtibāren on sene müddet resm-i gümrükden muʿāf tutulması ḫuṣūṣunuñ emānet-i müşārün-ileyhāya beyān ve işʿārı teẕkire olunmuş ve bir de esbāb-ı zirāʿatiñ tervīc ve teksīri żımnında ʿale'l-ıṭlāḳ çift ālāt ve edevātından gümrük ve rüsūmāt-ı sāʾire aḫẕ ve muṭālebe kılınmaması muvāfıḳ-ı ḥāl ve maṣlaḥat görüldüğünden bu ṣūretiñ dahi başkaca emānet-i müşārün-ileyhāya emr ü işʿarı ve Māliyye Neẕāret-i Celīlesi'ne dahi beyān-ı ḥāl buyurulması tensīb olunarak evrāḳ-ı merḳūme leffen pīş-gāh-ı ʿālī-i vekālet-penāhīlerine taḳdīm kılınmış olmağın ol-bābda emr ü fermān ḥażret-i men lehü'l-emriñdir." [. . . in fact, in the declaration

who were primarily dependent on archaic methods and whose productivity was extremely low. Cotton seeds were also distributed to small landowners and farmers, who formed the backbone of the agricultural sector, but the removal of the customs duty on the import of machinery, in particular, was a move that prioritised medium and large-scale farm owners.[207] It was aimed to mobilise the production of market-oriented agricultural enterprises, which elucidated that the Ottoman Empire was in a disadvantageous position in the years when cotton production began to increase from the very beginning.[208] Moreover, most of the Anatolian lands stretched out like a corpse, and there was no agricultural activity on these lands.[209]

There are many documents on the immediate supply of cotton seeds and the regions where machinery is needed.[210] The foreign press states that this policy has increased cotton production. For example, while the cotton imported from Izmir was 12,000 bales in 1860, it reached 60,000 bales in 1863. This situation was reflected in

prepared and announced regarding the imperial permission for cotton cultivation, nothing about cotton seeds was included, and it was deemed appropriate to include them so that machinery and various equipment should be exempted from customs duty for ten years from the date of the relevant exemption . . . and also, since it is considered appropriate not to collect customs and various other taxes on the tools (i.e., a yoke of oxen) and equipment related to the increase and reproduction of the value of the means of agriculture . . . .] BOA, İ.MVL 485/21969-3, 1 Ẕi'l-ḥicce 1279/20 May 1863; and Quataert, *Manufacturing and Technology Transfer in the Ottoman Empire*, 34.

[207] Yuzo Nagata points out that the boundaries of farms are unclear. For details of the discussion, please see Nagata, *Studies on the Social and Economic History of the Ottoman Empire*, 124.

[208] In the 1840s, 82% of the cultivated land in Anatolia was smaller than 60 decares (60,000 square metres). A study conducted on nine villages of Plovdiv, one of the prosperous agricultural regions and cotton-producing areas of the empire, indicates that the average farm size was around 3.5 hectares (35,000 square metres) in 1844 and 83% of the cultivated land belonged to small producer farmers. Güran, *Structure economique et sociale d'une region de campagne dans l'Empire ottoman*, 67–69; and Blunt, *The People of Turkey* (1878), 1:195. According to Reşat Kasaba, in 1869, 81% of the cultivated land was smaller than 5.4 hectares, that is, less than 60 decares. Compared to the figures given by Tevfik Güran in the 1840s, the proportion of small farms decreased by 1%. This difference may also be due to calculation. Kasaba, *The Ottoman Empire and the World Economy*, 62. McNeill asserts that agriculture is still done in the form of small-scale businesses today. McNeill, *The Mountains of the Mediterranean World*, 25. For a more recent study presenting the newer approach to farms, please see Aytekin, *Üretim, Düzenleme, İsyan: Osmanlı İmparatorluğu'nda Toprak Meselesi, Arazi Hukuku ve Köylülük* (2022).

[209] Kasaba, *The Ottoman Empire and the World Economy*, 64. The right to purchase land for foreigners for the utilisation of these vacant lands was repeatedly mentioned by the CSA. "Cotton Supply Association," *The Manchester Courier and Lancashire General Advertiser*, 6 October 1864, 4.

[210] BOA, İ.MVL 485/21969-3, 1 Ẕi'l-ḥicce 1279/20 May 1863. It is ascertained that the machines needed to clean cotton, along with someone who knows how to use them, were sent even to regions far from the centre, such as Yemen. BOA, A.}MKT.MHM 265/46, 21 Ẕi'l-ḥicce 1279/9 June 1863.

the producers' income, and the increase in the income was also reflected in the taxes.[211] However, a communication and cooperation network to meet all machinery needs could not be established between foreign and local actors.[212]

One of the problems encountered in cotton cultivation by small producers and medium and large-scale farms was irrigation. Even if the areas with higher soil quality were met, the production capacity could not reflect its full potential since cotton needed irrigated agriculture, and irrigation investments such as canals were minimal. This problem was related to state capacity for the most part.[213] Apart from these, the efforts of Ahmed Vefik Efendi, who was stated to have resolutely pursued his reform missions in Anatolia, were appreciated. The trust in Ahmed Vefik for the revival of a few submerged regions was expressed, and his attention was drawn to these areas.[214]

Delivery of cotton to ports by primitive modes of transport, such as camels, horses, mules, two-wheeled oxen, or buffalo carts, was a slow, expensive, and cumbersome way. Transportation with these animals sometimes became impossible due to the dire conditions of the roads.[215] Beckert describes such situations as

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[211] "Turkey Benefitting by Cotton Cultivation," *The Manchester Courier and Lancashire General Advertiser*, 30 August 1864, 4.
[212] *The Morning Post*, 24 September 1862, 6.
[213] For example, Christian A. Rassam, the British consul of Mosul, stated in 1863 that government incentives to grow cotton could not increase local production due to drought and lack of irrigation resources. Shields, "An Economic History of Nineteenth-Century Mosul," 115. For how the limited state capacities of economically developing countries were disadvantageous in the nineteenth century, please see Pamuk, *Uneven Centuries*, 71; and Teoman and Kaymak, "Commercial Agriculture and Economic Change in the Ottoman Empire during the Nineteenth Century," 322.
[214] "The energy which he displays is exciting [and] the admiration of everyone; and I must draw attention to his proceedings in Anatolia as a proof of what the intelligence and activity of one man can achieve." "Cotton Growing in Turkey," *The Manchester Courier and Lancashire General Advertiser*, 3 October 1863, 4. Other high-level inspectors, such as Ahmed Vefik Efendi, also worked in Anatolia and the Balkans. Kaya, "Searching for Economic and Administrative Reforms," 75.
[215] It took about four days by camel from Izmir to Aydın. Akyıldız, *Anka'nın Sonbaharı*, 16; and Sandford, "Social Economy: Conditions of Industrial Success. On Cotton Growing in Turkey and Syria," *The Levant Quarterly Review of Literature and Science* (July 1860): 61. Camel transport was seven times more expensive than rail and river transport. BOA, İ.MVL 451/20162, 6 Ṣafer 1278/13 August 1861.

inconsistent with "Lancashire's industrial rhythm."[216] The disruptions in transportation in the region, which was rich in resources and suitable for trade, hindered the development of both trade and agriculture. Therefore, the British, who wanted to benefit from the mobility of commercial life and agricultural potential in western Anatolia, undertook the construction of the first railway line in Anatolia.[217] Before the construction of the railway, there were 1,061 British merchants who were dealing with imports and exports in Izmir. One of the British merchants in the city, Robert Wilkin, and his four friends applied to the Sublime Porte for the concession of a railway to be built between Izmir and Aydın. Their applications were accepted with the support of the British Embassy in Istanbul. Since they could not afford such a large investment, they sold this concession to a group in England. Thus, the Ottoman Railway from Smyrna to Aydın was established in 1857.[218] It is not practical to consider railway investments and the agricultural sector apart. In the newspapers of the period, it is pointed out that investments in many sectors, especially agriculture, will increase with the railway lines that become widespread because they provide communication between coastal and inner regions with world markets.[219] Therefore, the privileges of constructing the Izmir-Aydın line in 1856, the Köstence (Constanța)-Boğazköy (Cernavodă) in 1857, the Rusçuk (Ruse)-Varna

[216] Beckert, *Empire of Cotton*, 128. For this reason, the importance of rail and river transport comes to the fore: "Pamuk ol-ṣūretle alındıkdan soñra cuvāle [çuvala] konılub nehir ve yāḫūd temür-yolı [demiryolu] ile gemiye taḥmīl olunacak limana naḳl olunması sāʾir yerlerde mechūl olan derecede sürʿat ve fīʾātıñ ehveniyyeti gibi iki ṣūretle menāfiʿi müstelzim olur." [After the cotton is bought in that way, it is put in a sack and transported to the port to be loaded on the ship by river or rail, and there are two benefits, such as speed and cheapness of price, which are unknown in various places.] BOA, İ.MVL 451/20162, 6 Ṣafer 1278/13 August 1861.

[217] In addition, the region attracts British investors with its abundant underground resources. Kolay, "İzmir-Kasaba ve Uzantısı Demiryolu Hatları," 23; and "Cotton in Turkey: (I) On Cotton Growing in Turkey and Syria by W. Sandford. (II) Railways, Cotton, and Provincial Exhibitions in Asia Minor by H. Clarke," *The Economist*, 11 May 1861, 511. British capital was the largest shareholder of foreign investment in the 1860s and 1870s. Pamuk, *The Ottoman Empire and European Capitalism*, 76.

[218] Özyüksel, *Osmanlı İmparatorluğu'nda Nüfuz Mücadelesi*, 8.

[219] "Intérieur. Constantinople," *Journal de Constantinople*, no. 1321, 19 April 1861, 2. Therefore, the most foreign direct investment, that is, two-thirds of the total foreign direct investment, went to railway projects. Pamuk, "The Ottoman Empire," 1:181–82.

in 1861, and the Izmir-Kasaba (Turgutlu) lines in 1863 were given to British investors. The Köstence-Boğazköy railway was put into operation on 4 October 1860, the Izmir-Kasaba on 10 January, and the Izmir-Aydın on 1 July 1866 (see Appendix B).[220] Since some of them were expanded after the American Civil War, they could not be combined with the boom to boost cultivation and production.

In the reports of Isaac Watts, the Secretary of the CSA, the government's first step toward infrastructure was also repairing broken roads.[221] In the nineteenth century, the need for road construction and repair increased so much that the actions taken were never enough. Such that in a report submitted by the Meclis-i Vālā to Âlî Pasha in 1864, it was written that the improvement of the road network, which effectively served economic development and public welfare as well as the expansion of cotton agriculture for two years, turned out to be a very urgent and general need.[222] A similar problem existed for ports as well. Existing ports were not enough to meet demand and to attract more investors.[223] Market and rural-urban integration and their efficiency levels are not only related to financing. The topography of Anatolia and the constraints of transportation means both strain the

[220] Akyıldız, *Anka'nın Sonbaharı*, 43. Most of the producer's earnings were going to the camel owners. Stephenson points out that when a bridge needs to be repaired, the locals cannot divide the work among themselves to repair the bridge, and the people do not have enough skills to fix it either. Stephenson, *Railways in Turkey* (1859), 37. Based on the news published in this period, special attention was drawn to the agricultural potential of cotton. For example, in a news report, it was said that 12,000 bales received from western Anatolia in 1862 reached approximately 60,000 in 1863, and the expectation for the next season would be 100,000 bales. Thus, future visions were included in the narrative to attract investors to the region. "Cotton from Turkey," *The Hereford Journal*, 24 January 1863, 7. For the map illustrating the Izmir-Aydin Railway, please see BOA, HRT.h 1744, 2 Rebīʿü'l-āḫir 1301/31 January 1884.

[221] Watts, *The Cotton Supply Association* (1871), 56–57.

[222] Karal, *Osmanlı Tarihi: Islahat Fermanı Devri (1861–1876)*, 7:367. In the same year, in the instruction given to the directors of agriculture, new provisions were made about giving importance to cotton cultivation from the seeds of America and Egypt. BOA, İ.MVL 501/22685, 29 Şaʿbān 1280/8 February 1864.

[223] So much so that even the port of Istanbul could not keep up with the intensified trade volume. For instance, even though a ship in the port of Marseille unloaded and filled its cargo in a maximum of two days thanks to the piers and platforms of the port, this period sometimes took up to a month in Istanbul. Kazgan, "Fuat Paşa'nın Sultan Abdülaziz'e Sunduğu Şubat 1862 Tarihli 1861 Yılı Bütçe Gelir ve Giderleri Gerekçesi ve Yorumu," 176.

state's capacity and make it difficult to establish a robust and centralised state structure. Besides, geography itself restricts the market integration of its people.[224] On 27 January 1864, a cotton traders' meeting was held in Istanbul, which discussed the developments and issues in cotton agriculture from the perspective of the social sciences during those years. Colonel Mesud Bey, who took an active part in the CSA and Imperial Cotton Commission, was appointed as a commissioner in international exhibitions attended by the Ottoman Empire, and engaged in cotton production in Balıkesir, was among those who took the floor at this meeting.[225] Mesud Bey is one of the transmitter actors who have served both the Ottoman Empire and the CSA. In this meeting, the cotton traders also requested permission from the Grand Vizier to use patented weighing machines at the customs in order not to waste time during the export process.[226]

Needing raw materials for its massive cotton industry, Britain played a role in cotton cultivation in the Ottoman Empire through its consuls as well.[227] To better

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[224] National Association for the Promotion of Social Science [Great Britain], *Transactions of the National Association for the Promotion of Social Science. Edinburgh Meeting, 1863* (1864), 1; and Cochran, *Pen and Pencil in Asia Minor* (1888), 83.

[225] The reason for the establishment of this factory, which was actually formed within the body of the company established under the name of the Ottoman Company Limited and on behalf of Mesud Bey, was the limitations imposed by the land and property laws in the Ottoman Empire. Even though the factory was in Mesud Bey's name, it would not be appropriate to see the factory as Mesud Bey's private property. In addition, Mesud Bey's command of the language and tradition of the people was expressed as an advantage. In this way, it was pointed out that the resentment and potential aggression of the local people would be prevented. The enterprise was also exempted from all taxes, except paper stamp duty. BOA, HR.SFR.3 72/29, 15 January 1863.

[226] "Cotton Merchants in Turkey," *The Leicester Chronicle*, 20 February 1864, 8. In the British press, it is stated that the owners of the factory and the board of directors are predominantly in the hands of the British, and Mesud Bey is mentioned as the general manager of the company established in Turkey. Local people were also promised that they could participate in commercial life and that their share would be protected. The company would be able to rent cotton gins to private actors for a fixed price and would use the port of Bandırma. "The Ottoman Cotton Company (Limited)," *The Times*, 9 May 1863, 3.

[227] Watts, *The Cotton Supply Association* (1871), 59–60; "The Great Cotton Question," *The British Friend: A Monthly Journal* (1 March 1861): 70; and Cotton Supply Association, *The Third Annual Report of the Executive Committee, to which is Added a Report of the Proceedings at the Annual Meeting, Held at the Town Hall, on Friday, May 11th, 1860, and a Review of the Present Position of the Cotton Trade in Reference to Supply* (1860), 8. Quataert points out that a similar role also exists in the silk technology transfer. Quataert, *Manufacturing and Technology Transfer in the Ottoman Empire*, 56.

comprehend the situation of the regions, questionnaires were conducted, communication was established with local actors and government officials, joint studies were carried out, and various technology and product transfers were followed through to eliminate the deficiencies of the regions. For example, Mr Salviati, the British consular agent in Aydın, informed the British public about the situation in his territory with a report published in *The Monitor* newspaper. This report draws attention to the free distribution of cotton seeds and the increase in mechanisation. According to the report, production before the American Civil War doubled. The same report highlights that the local officials control how people plant cotton.[228] The enquiries of the consuls accordingly indicate that they play a role as the sensory, transmitter, and entrepreneurial actors in cotton cultivation. Since they were at every stage of production, their range of action was wide and highly functional.

In addition to the consuls, the initiatives of private institutions and actors were also influential. As stated by an archive document from 1862, there were 81 British businessmen staying in Izmir.[229] Even though it is not possible to monitor each of these actors within the scope of this thesis, these statistics also mean that some of these businessmen are involved in cotton production as entrepreneurial actors. The private sector and government cooperation for cotton cultivation also coincided with this period. The Imperial Cotton Commission was established on 25 September 1862. Colonel Reşad Bey, an Ottoman army officer who served as the

[228] "Intérieur. Constantinople," *Journal de Constantinople*, no. 3334, 12 March 1864, 2. Apart from the British, various actors made efforts to grow cotton in the Ottoman geography. One of them is L. Carboneri, the Belgian consul of Thessaloníki. Carboneri prepared a detailed report on this subject and stated that regions, such as Siroz/Serez (Sérres), Zihne (today's Nea Zichni/Zichna), Drama, and Pravişte (today's Eleftheroupoli), came to the fore in the province of Thessaloníki. "Intérieur. Constantinople," *Journal de Constantinople*, no. 3330, 7 March 1864, 4. In a local example, Emin Pasha, the Governor of Trabzon, cultivated cotton on his land and helped those who were willing. "Intérieur. Constantinople," *Journal de Constantinople*, no. 3304, 5 February 1864, 2.

[229] Bulwer and Russell, "Inclosure in No. 5. The British Residents at Smyrna to Sir H. Bulwer. Smyrna, March 5, 1862," in *Papers Relative to Applications for Trial by Jury in Civil Cases in Turkey* (1862), no. 3033, at 64:5–6.

Imperial Commissioner of the Izmir and Aydın Railway until the permanent chairman was appointed, was elected as the head of this commission. The commission's vice-president was Hyde Clarke, an Englishman from the CSA. Among the members were the prominent merchants of Izmir: Charlton Whittall, Frederick LaFontaine, John B. Paterson, Peter Gout, and Thomas Bowen Rees.[230] After the government's initiatives, the most vital steps in the Ottoman Empire were taken by the work of this commission, which was directed by the CSA.[231] As well as the actions taken by the CSA, the study of the social network of the people working there would significantly contribute to the historiography of the commercial life of western Anatolia.[232] These domestic and foreign merchant families have had a more significant say in Izmir with the increasing trade volume. For instance, non-Muslim

[230] US Congress, House, *Letter of the Secretary of State, Transmitting a Report on the Commercial Relations of the United States with Foreign Countries, for the Year Ended September 30, 1862* (1863), 577. The news about establishing such a commission was made in the *Journal de Constantinople* in 1861. "Chronique locale et faits divers," *Journal de Constantinople*, no. 1497, 9 March 1861, 3. The establishment decision of the commission was taken within the framework of expanding cotton cultivation in Izmir. BOA, A.}MKT.NZD 435/101, 29 Muḥarrem 1279/27 July 1862; and *Taṣvīr-i Efkār*, no. 30, 14 Rebīʿü'l-āḫir 1279/9 October 1862, 2. Although some of the Imperial Cotton Commission members and the merchants operating in western Anatolia were of French or Greek origin, they benefited from the British Parliament's granting citizenship. The advantages and superiority of the British in commercial life had an impact on their transition to British citizenship. As far as can be determined, more than 700 Ottoman subjects from Izmir became British nationals between 1844 and 1913. Demirbaş, *Rees Köşkü*, 28–29.

[231] US Congress, House, *Executive Documents: Printed by Order of the House of Representatives During the Third Session of the Thirty-Seventh Congress. 1862–'63. In Twelve Volumes* (1863), 574.

[232] SALT Research Archive, Yolande Whittall and Benjamin Perkins, "The Whittall Family from Worcester in England to the Arrival in Turkey of the Brothers Charlton and James Whittall and the Descendants of Their Sons," Genealogy of the Whittall Family of Turkey, AFMWHTBK002, 1967; and Demirbaş, *Rees Köşkü*, 59. Charlton Whittall from the Whittall family and his son James Whittall were two of the strongest actors in the region. For a brief history of the family, please see SALT Research Archive, Whittall Family, "The Firm. The Commerce of the East and Smyrna. The Growth of the Firm's Business.," Trading in the Levant. Centenary of C. Whittall and Co., Smyrna. 1811–1911, AFMWHTBK001, 1912. For the list prepared by Kurmuş on the lands purchased by the British in western Anatolia, please see Kurmuş, *Emperyalizmin Türkiye'ye Girişi*, 80. For example, according to this list, A. O. Clarke 72,000 acres; W. G. Maltass 122,592 acres; R. Wilkin 130,228 acres; Frederick Whittall 18,868 acres; A. Edwards 80,000 acres; H. Abbott 75,472 acres; John P. Paterson 47,000 acres; Asia Minor Cotton Company 36,800 acres; J. Rees 30,000 acres; M. Baltazzi from the Baltazzi family, who would later establish kinship with some of these families, 82,000 acres; and D. Baltazzi purchased 247,000 acres of land. Citing the limitations of established research, Kurmuş hints that these numbers should be higher and estimates the total area to be between 2,400,000 and 2,800,000 acres. For example, the Whittall family is related to the Aliberti, Edwards, Giraud, Icard, Kramer, LaFontaine, Maltass, Paterson, Pearson, Rees, Tissot, Van Lennep, and Wilkinson families.

merchant families who submitted petitions to the government in 1860 demanded the establishment of a municipal organisation in Izmir in line with the Istanbul model. Even though Izmir was a municipality established and functioning, foreigners and non-Muslims were not represented in the municipal council, except for representatives of religious organisations. In 1864, a rearrangement was made in the organisational structure of the Izmir municipality in alignment with the wishes of foreigners and non-Muslims. The establishment of the Izmir Commercial Court in 1862 can also be seen as the success of these merchants.[233] The most prominent initiatives of these actors were the companies they established to proliferate cotton cultivation in western Anatolia. Examples of these companies are the Asia Minor Cotton Company,[234] the Cotton Bank of Anatolia,[235] the Manchester Cotton Company (under the auspices of the cotton committee in Izmir),[236] and the Ottoman Cotton Company.[237]

One of the matters that the British consuls frequently brought up in their reports was the issue of public order.[238] It was natural for the British to be stunned by the anarchy they observed in Turkey because, as Falih Rıfkı Atay puts it, "anarchy is not something British."[239] One of the most extreme examples that can be given to the

[233] Demirbaş, *Rees Köşkü*, 29.
[234] BOA, HR.TO 55/68, 27 August 1863.
[235] "The Cotton Supply," *The Times-Picayune*, 24 May 1861, 1.
[236] "Cotton Growing in Turkey and Syria [from *The Levant Quarterly Review*]," *The Guardian*, 25 May 1861, 5.
[237] BOA, HR.MKT 455/67, 21 Rebīʿü'l-āḫir 1280/5 October 1863; and "The Ottoman Cotton Company (Limited)," *The Times*, 9 May 1863, 3. These companies controlled not only the purchase and sale of goods but also each and every stage from production to distribution. Kurmuş, *Emperyalizmin Türkiye'ye Girişi*, 96.
[238] Threats posed by Turkmen nomads in the Çukurova region were reflected in British consul reports. Toledano, "Where Have All the Egyptian Fellahin Gone?," 134; and "La culture du coton en Turquie," *Journal de Constantinople*, no. 4706, 17 June 1865, 1.
[239] Atay, *Taymis Kıyılarında*, 37. Therefore, the greatest expectation of the British investor was to reduce the risk to the capital and protect it. It is underlined that the capital could flow to these lands if this guarantee were provided. The promises made in the Reform Edict of 1856 point out for the necessity of doing this. "To the Editor of *The Daily News*. Cultivation of Cotton in Syria," *The Daily News*, 23 August 1861, 3.

security problem is what happened to the British businessman James B. Gout.[240] According to the testimony of Robert W. Cumberbatch, the then British consul in Izmir, in the court records, the first factory of Mr Gout, who had multiple factories in the region, was attacked by the locals, and the angry crowd burnt down his factory because its chimney resembled a mosque minaret.[241] Except for one individual example in the footnotes below, the absence of a record of another similar case suggests that this may be one of those individual events or there may be other reasons behind the incident. What makes this unfortunate event even more interesting is that before the factory fire, Gout had distributed the cotton seeds sent by the manufacturers of London to the local people in the region. Despite the so-called generosity of Gout, who is not noted to have received any fees or compensation for this distribution, what happened to him is highly suspicious. For the cotton seeds distributed, 27 farmers from Aydın also wrote a letter of gratitude to a journal in Izmir.[242] Even though it does not seem plausible for Gout to be attacked in a place where he was appreciated, there was at least one other isolated incident of attack like Gout's account.[243] So, was this attack really the product of religious

[240] Gout's name is mentioned as "John Gout" in the list of businessmen who stayed in Izmir in 1862. Bulwer and Russell, "Inclosure in No. 5. The British Residents at Smyrna to Sir H. Bulwer. Smyrna, March 5, 1862," in *Papers Relative to Applications for Trial by Jury in Civil Cases in Turkey* (1862), no. 3033, at 64:5–6. His brother, Peter Gout, is a member of the Imperial Cotton Commission for Smyrna and Anatolia. US Congress, House, *Letter of the Secretary of State, Transmitting a Report on the Commercial Relations of the United States with Foreign Countries, for the Year Ended September 30, 1862* (1863), 577–78.

[241] Kurmuş, "Some Aspects of Handicraft and Industrial Production in Ottoman Anatolia," 98–99. According to Kurmuş, Gout became wealthier with raw cotton production in the region during the American Civil War and increased the number of his factories. He had a total of nine factories and 266 first-class ginning machines working in these factories. To the extent that 7% of the 34,000 bales of raw cotton imported from Izmir to Britain in 1862, that is, 2,418 bales, belonged only to Gout's factories. Gout has managed to increase this share every year. With the end of the war and the decline of global markets' cotton supply from the Ottoman Empire, Gout went bankrupt. For the bankruptcy decision, please see "In Her Britannic Majesty's Consular Court at Smyrna. The Bankruptcy Act, 1861," *The London Gazette*, no. 22978, 9 June 1865, 2987.

[242] "Chronique locale et faits divers," *Journal de Constantinople*, no. 1870, 16 May 1862, 2–3.

[243] As maintained by Osman Bayatlı, the Director of the Bergama (Pergamon) Museum, a cotton gin factory was established on the right side of the Üçkemer Bridge in Bergama (Izmir) in 1875. With the establishment of this factory, the local people working on the handloom, that is, the workers who cleaned the leaves by shaking the cotton boll, sorted the cotton with traditional methods, spun the

fanaticism or was there another reason behind Gout's inclusion of a story involving religious fanaticism in his narrative? Could it be in his best interest to construct such a narrative? If so, how? To address these questions, it should be checked whether the incident was documented in the Ottoman court records, a comparative case study should be made, and further scholarship on the microhistories of the British merchant families operating in Izmir should be conducted. In another example, a British merchant who wanted to open a dyeing and printing factory was faced with the reaction of the guild of printmaking tradesmen, and the central administration welcomed the guild's complaint that the factory brought about unfair competition.[244] Then, the question to be asked is: If this demand was not met positively, would there be an attack? Based on the information at hand, it is pure speculation to argue whether the incident is solely about religious fanaticism. This event can only strengthen the narrative of the security problem in the region.

Another issue that can be evaluated under the title of public order is that the civil servants do not act in accordance with the plans of the central government and sometimes they act on their own. For example, a letter sent from Thessaloníki to the CSA mentions a trend adopted by Ottoman customs officials that harmed the country's overall cotton trade and neutralised measures to encourage cotton planting.

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cotton yarn with the spinning wheel, and wove cloth on the loom, complained about this factory to the local administration. They thought they would lose their earnings because of the factory. When their complaints were not taken into account, they marched to the government mansion and killed a government employee named Dericili Hoca with stones and sticks. A group entered the newly built factory, demolished the walls with pickaxes and shovels, and smashed the goods inside the factory. Since this tiny event was reported as a massive rebellion, the person who came to suppress the uprising was Gazi Edhem Pasha. Gazi Edhem Pasha stayed in the region for ten days and took a close interest in the rebellion. Those who were alleged to have provoked the rioting were sentenced to prison. After this event, which Osman Bayatlı called the "Bloody Factory," the factory was rebuilt, but it did not function and was closed due to the lack of public support. The closed factory also burnt down after a while. According to Bayatlı, the chimney of this factory, which brought disaster to Bergama, survived for many years as a "bloody monument." As could be grasped from the narrative, this factory was actually a small facility, but it went down in history as proof that local people reacted to such facilities. Bayatlı, *Bergama'da Yakın Tarih Olayları*, 82.

[244] Kaya, "19. Yüzyıldan 21. Yüzyıla İzmir Ekonomisinde Süreklilik ve Kırılmalar," 64.

This example, which draws attention to the fact that ad valorem duty, which should not be taken from cotton seeds and gins, upon the decision of the centre, is taken by some officials, indicates a deliberate misconduct or unintentional lack of communication between the centre and the local bureaucracy.[245]

The subject of factories in question is one of the most challenging issues to elucidate in the context of the Ottoman Empire. Personal investments escalated with the cotton boom in the 1860s caused by the American Civil War. Following this trend, the private investment pattern in cotton mills is approximately as in Table 2 below. It is very complicated to estimate the exact number of these factories. To construct such metadata, not only domestic sources but also foreign sources must be comparatively subjected to a relatively long research process. For example, according to Scherzer, there were 34 factories in Izmir as of 1870.[246] It is essential to compare the physical conditions of these factories with the cotton mills in Manchester—*Cottonopolis*, the nineteenth-century appellation for Manchester. When factories are mentioned in the Ottoman Empire, the factories equivalent to those in Manchester should not come to mind. It would also have been unusual for factories identical to those in Manchester to emerge under the ambivalent nature of the Tanẓīmāt's industrial policies, that is, in an environment that encourages imports but restricts exports.[247] Some of these factories may consist only of a cotton-spinning mill, for example. Others should be regarded as smaller facilities compared to the physical structure of textile mills in Manchester. In addition, building such structures

[245] BOA, HR.TO 244/77, 11 October 1868; and "Cotton Supply Association," *The Manchester Courier and Lancashire General Advertiser*, 24 June 1864, 4. For a study of similar problems raised by customs officials, please see Frangakis-Syrett, "Implementation of the 1838 Anglo-Turkish Convention on Izmir's Trade," 93.
[246] Scherzer, *La province de Smyrne* (1873), 104.
[247] Güran, "Tanzimat Döneminde Devlet Fabrikaları," 236. Another proof that the definition of factory is problematic is that a general law regulation, including the operation of factories, was made in 1865. Quataert, *Manufacturing and Technology Transfer in the Ottoman Empire*, 34.

requires tremendous financing. In line with the information given by Issawi, the construction of a cotton mill in Antakya in 1870 cost £40,000.[248]

Table 2. Private Investment in Cotton Mills in the 1860s

Location	Number	Location	Number	Location	Number
Adana[249]	6	Damascus[250]	1	Izmit[251]	2
Antakya[252]	2	Edirne[253]	2	Manisa[254]	2
Aydın[255]	2	Filibe[256]	3	Mersin[257]	1
Balıkesir[258]	6	Gallipoli[259]	1	Sérres[260]	2
Beirut[261]	1	Haifa[262]	2	Tarsus[263]	1
Biga[264]	1	Istanbul[265]	1	Thessaloníki[266]	1
Cyprus[267]	2	Izmir[268]	6		

[248] Issawi, *The Fertile Crescent*, 379.
[249] BOA, İ.MVL 516/23260-7, 19 Rebīʿü'l-āḫir 1281/21 September 1864; BOA, C.NF 1/39, 29 Receb 1281/28 December 1864; BOA, HR.MKT 585/98, 3 Cemāẕīyyü'l-evvel 1284/2 September 1867; BOA, İ.ŞD 15/656, 29 Ṣafer 1286/10 June 1869; and BOA, ŞD 2870/52, 3 Ẕi'l-ḥicce 1289/1 February 1873.
[250] BOA, HR.MKT 603/92, 3 Ẕi'l-ḳaʿde 1284/26 February 1868.
[251] BOA, A.}MKT.MHM 373/40, 23 Ramażān 1283/29 January 1867; and BOA, HR.MKT 716/61, 3 Receb 1288/18 September 1871.
[252] BOA, İ.MVL 569/25579, 19 Ẕi'l-ḳaʿde 1283/25 March 1867; and BOA, A.}MKT.MHM 378/91, 3 Ẕi'l-ḥicce 1283/8 April 1867.
[253] BOA, A.}MKT.UM 813/20, 25 Cemāẕīyyü'l-evvel 1281/26 October 1864.
[254] BOA, İ.MVL 524/23534, 29 Receb 1281/28 December 1864; and BOA, C.İKTS 22/1097, 29 Şaʿbān 1281/27 January 1865.
[255] BOA, İ.MVL 504/22829, 3 Ẕi'l-ḳaʿde 1280/10 April 1864; and BOA, ŞD 496/14, 24 Ẕi'l-ḳaʿde 1287/15 February 1871.
[256] BOA, A.}DVN.MKL 5/8, 25 Muḥarrem 1281/30 June 1864; BOA, BEOAYN.d 454, 29 Rebīʿü'l-evvel 1281/1 September 1864; and BOA, MVL 487/84, 18 Receb 1282/7 December 1865.
[257] BOA, İ.MVL 516/23260-7, 19 Rebīʿü'l-āḫir 1281/21 September 1864.
[258] BOA, HR.SFR.3 79/20, 25 June 1863; BOA, İ.MVL 516/23256, 16 Rebīʿü'l-āḫir 1281/18 September 1864; BOA, HR.TO 242/37, 21 February 1866; BOA, HR.MKT 564/74, 19 Receb 1283/27 November 1866; BOA, İ.MMS 33/1373, 13 Ramażān 1283/19 January 1867; and BOA, A.}MKT.MHM 373/40, 23 Ramażān 1283/29 January 1867.
[259] BOA, HR.MKT 521/21, 11 Ṣafer 1282/6 July 1865.
[260] BOA, A.}MKT.UM 806/67, 26 Rebīʿü'l-āḫir 1281/28 September 1864; and BOA, İ.MVL 519/23366, 28 Cemāẕīyyü'l-evvel 1281/29 October 1864.
[261] BOA, A.}MKT.UM 812/76, 24 Cemāẕīyyü'l-evvel 1281/25 October 1864.
[262] BOA, HR.MKT 509/9, 26 Şaʿbān 1281/24 January 1865.
[263] BOA, İ.MVL 516/23260-7, 19 Rebīʿü'l-āḫir 1281/21 September 1864.
[264] BOA, İ.MVL 524/23530, 28 Receb 1281/27 December 1864.
[265] BOA, HR.TO 509/19, 30 September 1867.
[266] BOA, ŞD 2006/10, 28 Ṣafer 1292/5 April 1875.
[267] BOA, HR.MKT 561/88, 18 Cemāẕīyyü'l-āḫir 1283/28 October 1866; and BOA, HR.TO 494/106, 1 April 1867.
[268] BOA, HR.MKT 420/61, 21 Cemāẕīyyü'l-āḫir 1279/14 December 1862; BOA, MVL 649/43, 15 Ẕi'l-ḥicce 1279/3 June 1863; BOA, HR.MKT 471/35, 22 Ramażān 1280/1 March 1864; BOA, İ.MVL 509/22989, 1 Muḥarrem 1281/6 June 1864; BOA, İ.MVL 516/23258, 18 Rebīʿü'l-āḫir 1281/20 September 1864; and BOA, HR.MKT 554/3, 29 Rebīʿü'l-evvel 1283/11 August 1866.

Despite the exploitation of female and child labour in cultivating the land and harvesting the crops, labour shortage was one of the main problems of every single cotton farmer.[269] Therefore, it was believed that with the widespread use of machinery, the elimination of capital shortages, the opening of new institutions, the construction of highways and railways, and the introduction of additional labour arising from the migration of Caucasian immigrants, most of whom were Circassians, considerable developments in agriculture would occur in the Ottoman lands.[270] All these shortcomings are also linked to financial problems. The economic revival in western Anatolia in the middle of the nineteenth century is not based on sufficient data and documentation to substantiate the assertion that it took place according to the conditions determined by local and foreign actors who were claimed to have succeeded in appropriating a large part of the wealth arising from this revival. The upward momentum has indeed been observed in the foreign trade figures and the monetisation process in the economy since the 1850s. Foreign trade, which has increased eight to ten times, has also accelerated domestic trade. Notwithstanding the fact that domestic trade does not perform as well as foreign trade, it can be acknowledged that there has been a three to fourfold increase in domestic trade when the money in circulation is examined.[271] Nonetheless, the price

[269] "Cotton in the Sultan's Dominions," *The Guardian*, 16 January 1861, 4. Because, as Delmar Hayter states, cotton requires extra effort and attention: "It is a [highly] personalised crop, demanding extra labour, attention, and care from its growers to a greater extent than most other crops." Hayter, "Expanding the Cotton Kingdom," 225.
[270] "The Turkish Cotton Crop," *The Glasgow Herald*, 15 August 1864, 6; "The Circassian Exodus," *The Paisley Herald and Renfrewshire Advertiser*, 10 September 1864, 2; Kasaba, *A Moveable Empire*, 117; and Kasaba, *The Ottoman Empire and the World Economy*, 68. Free cotton seeds were also distributed to these immigrants, who were mostly settled in Adana and its vicinity. Gratien, "The Mountains Are Ours," 86. Thus, cotton agriculture in the region increased sixfold between 1860 and 1865. The dynamics that emerged during the American Civil War had triggered the stagnation of cotton cultivation in the Adana-Çukurova region in the opposite direction. In other words, the claim that the American Civil War had no effect on the Adana-Çukurova region does not reflect the truth. For instance, a fruitful harvest in grain and cotton agriculture in 1863 had pleased the Sultan. BOA, A.}MKT.MHM 282/69, 22 Cemāz̲īyyü'l-evvel 1280/4 November 1863; and Gould, "Pashas and Brigands," 195.
[271] Güran, "Zirai Politika ve Ziraatte Gelişmeler," 230.

increases—both raw cotton prices and wages—and the results drawn from the production charts, which do not have the upper hand over the nature and details of the economic revival, do not reveal the pervasive and complex networks of actors. When the bankruptcy stories of those dealing with cotton enterprises are scrutinised, particularly during these boom years, it is easily noticed that the hypothesis arguing the economic revival took place in accordance with the conditions determined by the *intermediaries* who controlled the wealth arising from this revival has weak grounds. Even though there have been studies in recent years that have updated some of the common (mis)perceptions and knowledge of nineteenth-century farms, these studies do not change the fact that in the second half of the nineteenth century, for example, in 1878, only one out of every 27 rural settlements in Anatolia and one out of every four settlements in Rumelia had farms.[272] That is to say, the central and distinctive feature of the nineteenth-century Ottoman agricultural life was the predominance of a subsistence economy. Additionally, it is not possible for production networks that lack long-term organisational or structural stability to determine the conditions for such a revival. Because, although the wealthy of the period were concentrated in big/port cities and trade centres on the coast,[273] no study has yet been conducted revealing that this prosperous class has permanently transferred their wealth from generation to generation.

In Ottoman economic history, there are various discussions about how much of the accumulated capital was *bezirgān* (merchant), how much *ṣarrāf* (usurer/money

[272] Ibid.
[273] When it comes to such locations, annotations should always be made. For example, although Genoa has been a bustling trading port for centuries, some villages within a few hours of it, ironically, are not fully open to the outside world even today. Some subjects and questions may require a much larger lens, while others require much smaller ones. The average per capita income in the Izmir province rose almost three times between 1855 and 1876; however, this wealth was concentrated in the coastal areas rather than inland. Akyıldız, *Anka'nın Sonbaharı*, 50.

changer), and how much productive capital. These debates sometimes date back to include the seventeenth and eighteenth centuries as well. The main questions are: Was there productive capital accumulation in Turkey in the nineteenth century? In which areas was the existing capital accumulation occurred? How does this capital compare and contrast with productive and industrial capital in Europe? Was the Ottoman Empire governed by an extensive network of debit and credit? There are some problems in addressing these issues. Some historians consider these economic-based readings as economic determinism and approach them with suspicion.[274] Therefore, how to avoid economic determinism here creates a separate and dynamic field of discussion. Moreover, contemporary studies still associate capital production in Anatolia with the *capitalist world system* because the scholars fear falling into the "sluggish Eastern peasants" narrative of eighteenth and nineteenth-century travellers (along with the literati, in fact).[275] The depiction of the Anatolian peasant as a "sluggish Eastern type" is already a reductionist view in every respect. It was not a logical move for the subjects to produce more than their own needs and more than the subject's own tax burden in an uncommercialised or scarcely-commercialised region. Anatolian peasants would not terrace the field and clear the stones to produce a crop they could not sell. In addition, one should not forget the famines Anatolia struggled with throughout the nineteenth century and even continued at the beginning of the twentieth century.[276] A historian who follows every actor/object comprehends that s/he must always act cautiously when evaluating the term "sluggish Eastern." It should be noted that the "sluggish Eastern peasantry" narrative of some European travellers was based on their own lands and habits. Such inferences can only be made

[274] Conrad, *What Is Global History?*, 105.
[275] "The Turkish farmer philosophically attributed the result to the will of Allah . . . ." Cochran, *Pen and Pencil in Asia Minor* (1888), 386.
[276] Turgay, *Türk Ziraat Tarihine Bir Bakış*, 210.

when the characters and actions of the peasants are examined without including the nature of the regions along with their potential.

In order not to fall into generalisations that partially reflect reality, the material conditions of the empire are discussed in detail in this section. The governments during the Tanẓīmāt era did not fully succeed in their three main objectives in terms of the financial administration.[277] The first of these goals was to impose a tax on income and wealth directly instead of the traditional tax system that does not consider solvency. The second was the taxation of everyone who could afford to pay without exceptions and exemptions. The third goal was to collect these revenues directly on behalf of the state with the establishment of an effective financial bureaucracy, in other words, modern finance.[278] The financial side of Ottoman cotton production during the American Civil War does not contradict Güran's narrative. Perhaps the weakest point of the Tanẓīmāt movement, as Eldem argues, is the failure of the financial part of the attempted administrative reforms and regulations.[279] During the reigns of Sultan Abdülmecid and Abdülaziz, state revenues increased in a way that left no room for discussion. Significant steps were taken in the direction of financial restructuring. The main objectives in the financial field, namely direct taxation of income and wealth, taxation of everyone who could afford to pay without exceptions and exemptions, and to collect these revenues directly on behalf of the state by creating an effective financial bureaucracy, were tried to be implemented. The same firm steps and determination have not been displayed in bringing expenditures under fiscal discipline. It has not been successful in directing the resources obtained through the domestic and then the foreign borrowing process,

[277] Güran, ed., *Osmanlı Malî İstatistikleri*, 7:3–4. For a more detailed and recent account of the nineteenth-century monetary system, please see Eldem, "Genel Kargaşa ve İdare-i Maslahat."
[278] Ibid.
[279] Eldem, *135 Yıllık Bir Hazine*, 25.

and more importantly, to increase production, that is, directing to areas that will ensure the repayment of these debts. Therefore, the state and the society have found themselves in the middle of a financial crisis. In other words, the Ottoman financial administration faced financial bankruptcy despite all these substantial financial restructuring efforts. After all, regardless of the numerous negotiations and the tendency to realise whatever the circumstances required, the radical transformations in Western Europe did not take place in the Ottoman Empire. For example, private land ownership did not become more robust as in Europe, the weight and influence of merchants on the state policies did not strengthen, and the accumulation of capital in private hands did not reach a level comparable to that of Western Europe. Besides the financial transformation stagnating, the influential power of the Ottoman landowners, merchants, and industrialists over state policies has always been minimal. Transformations in Europe were not seen on the workers' and peasants' front, either. The manoeuvring opportunities of the period, for the central bureaucracy to hold power, were used in areas where the bureaucracy was very sensitive, as long as they suited the needs of the bureaucracy, not to change the institutions of the society or the general economic structure. Changes and developments in private financial institutions were also very limited.

There has always been a need for financial institutions to retain investments and any initiatives in the country. Therefore, this problem directly affects the case of cotton. The Ottoman Bank alone was not as much as required, and during the American Civil War, it did not yet have sufficient experience and capacity. Moreover, the success of the Ottoman Bank's branches outside of Istanbul was also a controversial issue. According to C. G. A. Clay, by the end of the American Civil War, there was no remarkable success due to the unstable structure of western

Anatolia, still open to many externalities. In addition, the dynamics of the region differed excessively from Western Europe, and there were no executives who could keep up with this dissimilitude.[280] In these years, the Ottoman Financial Association was established with a capital of one million pounds to assist the domestic enterprise. However, the state's capital could not keep up with the infrastructure works.[281]

Another problem in the finances of the Ottoman Empire is related to statistics.[282] Even though Agop Efendi, the then Undersecretary of the London Embassy, was appointed as Turkey's delegate to the International Statistics Congress in 1860, there was no statistical activity in the country that the CSA could benefit from.[283] Therefore, it is seen that the CSA kept statistics with its means, and it is impossible to determine the accuracy of these statistics. Maybe because it was aware of this situation, the Ottoman Empire started to work on teaching statistics throughout the country, suffering from statistical problems in cotton production and trade.[284] In Ratip Yüceuluğ's 1947 study, which was written with the sharp language of the early Republican regime against the Ottoman Empire and therefore should be carefully analysed, it is stated that the studies on collecting statistics in the Ottoman

[280] Clay, "Western Banking and the Ottoman Economy before 1890," 496.
[281] "The Ottoman Financial Association," *The Bankers' Magazine* (November 1864): 1033; and "Ottoman Financial Association, Limited," *The Bankers' Magazine* (March 1864): 308. Among the executives were John Cheetham, the President of the CSA, working on expanding cotton farming in Turkey, and J. Lewis Farley, who would later become an official for the Ottoman government. Therefore, among the objectives of this financial institution was to provide the local cotton producer with the credit support they needed. "The Ottoman Financial Association," *The Spectator*, no. 1859, 13 February 1864, 193; BOA, HR.SFR.3 85/36, 13 February 1864; "Intérieur. Constantinople," *Journal de Constantinople*, no. 3328, 4 March 1864, 2; and "Dernières nouvelles," *Journal de Constantinople*, no. 3339, 18 March 1864, 4. The financial institutions that emerged during the cotton boom did not succeed. Clay, "Western Banking and the Ottoman Economy before 1890," 477.
[282] ". . . statistics can hardly be said to exist in Turkey . . . ." Clarke, "On the Supposed Extinction of the Turks and Increase of the Christians in Turkey," *Journal of the Statistical Society of London* (1865): 261. The first statistical yearbook of the Ottoman Empire would be published in 1897. Güran, ed., *Osmanlı Devleti'nin İlk İstatistik Yıllığı 1897*, 5:xix.
[283] BOA, HR.SFR.3 53/3, 12 July 1860; and "International Statistical Congress, 1860. Foreign Official Delegates. Turkey.—Agop Effendi, Secretary of the Ottoman Legation at Paris," *Journal of the Statistical Society of London* (September 1860): 384.
[284] BOA, A.}MKT.MHM 347/28, 9 Şaʿbān 1282/28 December 1864.

state only started with the Statistics Office created within the Ministry of Trade in 1875.[285] The description was superficially correct, although some small advances had shown that this narrative was incomplete. The failure to keep statistics on cotton and the inability of a modern statistical institution to endure was one of the obstacles to putting forward a planned and programmed cotton strategy.

So, what was the situation before 1875? In the discussions reflected in the UK command papers, the inadequacy of the Ottoman finances was expressed in terms of central administration and general control, and radical reforms were expected in this regard. According to this source, it is challenging even to calculate the average tithe paid by each village over the last five years since official records were not kept for these payments.[286] Despite all these financial deficiencies, some modifications were made in taxation, primarily upon the insistence of British actors—not only the ones who had direct relations with the state but also private entrepreneurs and the press. The export duty on cotton, which was normally 12%, was reduced to 1% in 1862.[287] Thus, while there was a very weak cotton export in 1858, the size of cotton exports from the Ottoman Empire in 1864 and 1865,

[285] Yüceuluğ maintains that, after a while, the Statistics Office was interrupted by the war between Russia and the Ottoman Empire because the expert appointed to the head of the office was brought from the Russian Tsardom. Yüceuluğ, *Türkiye İstatistik Teşkilatı ve Tarihçesi*, 15. A regulation was issued in 1880 for the dissemination of statistical studies. In the same year, an independent Statistical Directorate was established, and it was planned to establish a statistical commission in each *ḳażāʾ* (district), *livāʾ* (county/sanjak), and *vilāyet* (province/provincial) centre. In addition, a statistical office would be set up in each *neẓāret* (ministry). "İstatistik İdārelerine Dāʾir Niẓām-nāmedir [4 Ṣafer 1297/17 January 1880]," in *Düstūr* [Tertīb I] (1299 [1881/1882]), 4:670–72.
[286] Foster and Hobart, *Turkey. Report on the Financial Condition of Turkey, by Mr. Foster and Lord Hobart, dated December 7, 1861* (1862), no. 2972, at 64:1–2. Similar complaints were also reflected in the reports of the CSA. Wanklyn, *Report on the Samples of Cotton in the International Exhibition, Made on Behalf of the Cotton Supply Association* (10 June 1862), 14. According to Kazgan, there was not a single line in the budget report about the yield per hectare in wheat farming of Anatolia in those years. Nonetheless, in the statistics kept in the central European countries in the same years, there were figures that gave this and similar information and even specified their details to a greater extent. In this respect, Kazgan evaluates the (budgetary) income and expenditure reports presented by Fu'ad Pasha to Abdülaziz as "amateurs." Kazgan, "Fuat Paşa'nın Sultan Abdülaziz'e Sunduğu Şubat 1862 Tarihli 1861 Yılı Bütçe Gelir ve Giderleri Gerekçesi ve Yorumu," 181.
[287] Panza, "De-Industrialization and Re-Industrialization in the Middle East," 162.

although lagging behind Egypt, gained visibility in statistics, charts, tables, and various visualisation studies of the period. One of them is the map prepared by Charles Joseph Minard (see Appendix C).[288]

The capital accumulated in the Ottoman lands in the nineteenth century was so limited that new Manchester entrepreneurs and other similar sources of capital were sought to support cotton production ventures to provide the needed capital.[289] In other words, there was a desperate need for capital to be supplied and for entrepreneurs who would patiently wait for the results. *The Guardian* described Lancashire's responsibility as follows: "The quickness of demand in Lancashire outruns Asiatic slowness of supply; and, if in hot haste for speedy results, Lancashire must look to furnishing materials for greasing the wheels."[290] For this reason, although the priority of cotton seeds was given to people who were experienced and had been in some experimental cotton production processes, the solution of infrastructure problems turned into another endless story. The CSA, independent British businessmen, and local entrepreneurs desperately run every single business in the region. It also often falls to the CSA to find the capital, to dispatch competent practical trainers to the required areas, to distribute useful publications on cotton cultivation, albeit on a small scale, to persuade the government to take new and more radical steps and initiatives, and to provide feedback on the actions taken. The CSA, bent under this pressure, failed to delineate that things could not be accomplished without a helpful and solution-oriented bureaucracy in a country with enormous military expenditures.

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[288] Minard, "Carte figurative et approximative des quantités de coton brut importées en Europe en 1858, en 1864 et en 1865 [Map]," LOC G3201.J82/1865.M5, 1866.
[289] "Cotton Growing in Turkey and Syria [from *The Levant Quarterly Review*], *The Guardian*, 25 May 1861, 5.
[290] Ibid.

If the Aegean region was relatively more successful than other regions of the Ottoman Empire, it was not only because of the favourable climate. Since the mountain ranges in the Aegean region fall vertically, not parallel to the coasts, unlike in the Mediterranean region, vast plains ideal for agriculture and human population gathering and settlement stretch between these mountains inward from the coast. Due to the condition of the mountains, transportation problems are less compelling compared to other regions.[291] Furthermore, Turkey's precipitation regime is irregular. The sudden change of weather cycles from one year to another, rain sometimes less, sometimes excessively or unseasonably, may cause the crop to deteriorate and all the effort to be wasted.[292] A similar problem was also encountered in India, and American agricultural practices failed due to the difference in precipitation patterns.[293] Greater climate volatility demanded more skills and more labour from the Ottoman farmers. Although a part of this skill was met with experience, experience alone was insufficient to meet another part of it. Thus, from time to time, old knowledge and methods are entirely shelved; that is, the combination of modern techniques and local knowledge, which is frequently encountered as *hybrid knowledge* in the literature, becomes inoperable. The local farmer only needs to apply modern methods and have access to the necessary technology—at least, that is the case when it comes to cotton cultivation.

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[291] Sarc, *Türkiye Ekonomisinin Genel Esasları*, 1:20.
[292] Ibid., 39. Damage to the crops due to the irregularity of the rains could bring farmers and mültezims against each other, causing some mültezims to treat the farmers cruelly. *Taṣvīr-i Efkār*, no. 245, 7 Cemāẕīyyü'l-āḫir 1281/7 November 1864, 1. In another example, *The Morning Post*'s Istanbul correspondent reported that the cotton harvest suffered greatly with the onset of rains in October, the harvest month: "Sixty per cent of the crop, he says, has been destroyed, and the remainder will be of bad colour, and of weak and uneven staple." "Turkey," *The Morning Post*, 9 November 1864, 2; and "The Cotton Crop in Turkey," *The Worcestershire Chronicle*, no. 1404, 16 November 1864, 5. Even though there were Ottoman historians who included "natural forces" in their narratives, they generally found little space for themselves in economic history. For example, Sarah D. Shields draws attention to the following fact in an article about the economy of the Mosul region: "Mosul's agriculture was closely tied to natural forces." Shields, "Regional Trade and 19th-Century Mosul," 22.
[293] Beckert, *Empire of Cotton*, 126.

Consequently, those who study agricultural history often come across farmers' concerns about precipitation in both primary and secondary sources. In spite of the fluctuations in the climate, the expectation for cotton from the region was very high, and the potential of the region to attract new investors was exaggerated by various newspapers over and over again. Unless the real potential of the region was known, the potential was whatever the press speculated.

Another significant issue concerning the Ottoman Empire is the following statement from the Hansard parliamentary records: "There was no *middle class* [in the Ottoman Empire], in our conception of the term."[294] This anecdote may raise questions such as: 'Who was the middle class in the Ottoman Empire of the 1860s?' 'What did it mean to be a middle class in this vast and diverse geography?' The debate in the Parliament is, of course, a reflection of the British experiences in the Ottoman Empire. It was underlined that a middle class in the British Empire did not exist in the Ottoman Empire. Even though the existence of the middle class in the Ottoman Empire and the meaning of this class is still a subject that has not been studied enough, it is apparent that the existence of a substantial middle class in the Ottoman Empire as in Britain cannot be mentioned. As long as the discussion is not limited to the Ottoman geography and is not dealt with within the dynamic structure of the regions, problematising this statement, which was voiced in the British Parliament, would be a superfluous discussion that conceals what needs to be said rather than revealing the forces behind what is said.

The fact that there was almost no middle class also complicates the cotton cultivation and production processes. It is much more challenging to attract investment in a geography that does not have an economically advantageous

[294] 171 Parl. Deb. (3d ser.) (29 May 1863) cols. 6–148 (emphasis added).

population for business. The only thing that could be found was debt, but with these debts, no steps could have been taken to save the country from the current debt spiral. Between 1854 and 1882, 20.4 billion piastres were borrowed, but only 11.6 billion piastres were generated as revenue.[295] To define such developments in finance as a part of modern public finance, it would be inevitable to exclude the Ottoman Empire from all existing equivalents and commend it solely for its own effort to employ the financial developments provided by the conditions of the period. Even the articles published in the *ʿİbret* to complain about the actions of the *Altıncı Dāʾire-i Belediyye* (Sixth Department of the Municipality) demonstrate how problematic the concept of modern finance was in the Ottoman Empire. For example, Nâmık Kemal, in his article titled "*Altıncı Dāʾire-i Belediyye Ḥaḳḳında* (About the Sixth Department of the Municipality)" published in the *ʿİbret*, claims that no records were kept of the income and expenses of the Sixth Department of the Municipality.[296] The fact that these and similar complaints came from prominent elites or gentlemen, on the other hand, points out to an assertion that Lord Stratford voiced in the Parliament, that public opinion had no legitimacy in Turkey, except in extreme cases, and that the driving force must have come from abroad.[297] When it comes to cotton agriculture, there is also a need for a public voice that will mobilise local and foreign actors and, more importantly, the state. The implication of this public voice can be seen in the example of Britain. The voice of families affected by the cotton crisis has shaped not only domestic but also foreign policy.

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[295] Güran, ed., *Osmanlı Malî İstatistikleri*, 7:15. Humorously, it can be said that the Ottoman Empire was a life-long debtor state after the Crimean War. But it turned out that the Turkish proverb, *borç yiğidin kamçısıdır* [debt is the whip of the mighty/brave], was just a folkloric footnote.

[296] *ʿİbret*, no. 128, 3 Ṣafer 1290/2 April 1873, 1–2. Could not the articles in the *ʿİbret* be treated as a kind of middle-class public opinion? Alternative approaches might be suggested as it had a limited number of readers in a restricted region.

[297] 165 Parl. Deb. (3d ser.) (14 March 1862) cols. 1511–26. For a contrasting thesis on the concept of "public opinion" in the Ottoman Empire, please see Şiviloğlu, *The Emergence of Public Opinion: State and Society in the Late Ottoman Empire* (2018).

There have been other historians following Christopher K. Neumann, trying to bring a different perspective to the debate on whether there was a public opinion in the Ottoman Empire. According to Neumann, Ahmed Cevdet Pasha, in his writings, used the terms "*efkār-ı ʿumūmiyye*" and "*efkār-ı ʿāmme*" for the public opinion and drew attention to the fact that the discontented people formed a public opinion and fell under the influence of predominant interest groups such as the Janissaries or the *ʿulemāʾ*.[298] There are some problems with this approach as well. The public opinion that Lord Stratford speaks of is the fusion of the life principle adopted by a large mass of people and the practice that supports it, that is, a public opinion that can be taken into account. From this, it can be inferred that the conceptions of the term of the two countries differ. The historian can subtly pull the concept of public opinion to any point by considering it in the Ottoman Empire as akin to a reflection of an implied *social contract* or a delicate balance between government and other administrative units or the society.

Hence, the enquiries of what public opinion meant as well as its ontological structure in different centuries turn out to be totally unanswerable and obscure. Ontological differences in and between rebellion movements, efkār-ı ʿumūmiyye,

[298] Neumann, "Ahmed Cevdet Paşa'nın Tarihçiliğine Yansıyan Zihniyet Dünyası," 66. The example given by Neumann can be shown as an example of the formation of a public opinion in the Ottoman Empire, not a public opinion equivalent to that of Europe, but rather the *formation* of a public opinion. There is another crucial aspect expressed by İbrahim Alâeddin Gövsa regarding the concept of public opinion in the Ottoman Empire. Gövsa says that he finds the expression efkār-ı ʿumūmiyye crippled, that the term *opinion publique* in French has been translated into Turkish as efkār-ı ʿumūmiyye, and that it is a wrong genitive construction. As claimed by Gövsa, when efkār-ı ʿumūmiyye is made into a Turkish compound, it means "*umūmī fikirler* (general opinions/ideas)" and is the opposite of "*ḫuṣūṣī fikirler* (private/particular ideas)." In French, he says the equivalent is *les opinions générales*, and, therefore, "efkār-ı ʿāmme" would be a more appropriate usage than "efkār-ı ʿumūmiyye." According to Gövsa, even though the shape of efkār-ı ʿumūmiyye is crippled and its base is foreign, its content, connotation gained meaning and sincerity only after the Republic. In this respect, comparative studies or a global history approach would be much more helpful in comprehending the concept of public opinion more accurately Gövsa, "Efkar-ı Umumiye," Yedigün, no. 313, 7 March 1939, 8. In his related article, Neumann mentions the subject Gövsa had previously expressed in the footnotes of his symposium paper without giving any reference to İbrahim Alâeddin Gövsa. Neumann, "Ahmed Cevdet Paşa'nın Tarihçiliğine Yansıyan Zihniyet Dünyası," 66.

and public opinion should not be ignored. Otherwise, how could the symbol of the so-called efkār-ı ʿumūmiyye in London be decided against the symbol of Istanbul, to be displayed against the British Parliament? How could the fact that Selimiye Barracks was one of the massive structures to be seen in Istanbul find a place for itself in the narrative? A narrative that does not focus on the ontological differences in the mobility of the two cities cannot accurately answer these questions. Moreover, when this difference was ignored, it could even be claimed that public opinion played an active role in the appointment and dismissal of Ottoman statesmen.

Such an approach is sometimes indolently accused of Orientalism. Although making Orientalism a purely derogatory concept is problematic, it is not as straightforward as it seems to label this and similar interpretations as an Orientalist discourse. Because the distribution regions of the newspapers and the number of printed newspapers are not the facts that society constructs and manipulates. The external world is a reality that goes beyond conceptual schemas and can stand independently of them. Ferraris illustrates this with a good example: ". . . the fact of knowing that this key lets me open the front door (epistemology) does not allow me to open the door if I have lost the key in question (ontology)."[299] In other words, the reality encountered is a reality that reveals itself by contradicting our conceptual expectations and, therefore, stands against the represented reality, which is the favourite of social constructivists. Mainstream Orientalism critiques, on the other hand, prefer a different path and make what we see depend on what we know. So, I can either change what I see as I want or if what I see is what others see, my hands are tied: a sweet ending that comes with conceptual schemes. It is such a sensitive subject that searching for a reflection of all the Western practices or 'lenses' in

[299] Ferraris, *Manifesto of New Realism*, 27.

different parts of the world and arranging similar ones under a specific category can also be described as a sort of Orientalism. Today's critique of Orientalism may be tomorrow's example of Orientalism.

Without further mentioning the scientific and technological input in Ottoman cotton cultivation, the path followed by the Ottoman government can be summarised as follows: Many propitious efforts to intensify cotton production, which started before Sultan Abdülaziz and gained visibility with the impact of the American Civil War, were implemented in socio-economic life with laws and regulations that seemed necessary in this regard. The most noteworthy of these was the "*pamuk zirāʿatiniñ tervīc ve tekṣīri ḥaḳḳında erzān buyurulub muḳaddemce beyān-nāme-i maḥṣūṣ ile neşr ve iʿlān olunan müsāʿadāt-ı seniyye fıḳarātı*," [the sections of imperial permits, which have been approved, issued, and announced with a special declaration on increasing and reproducing the value of cotton agriculture] dated 27 January 1862. Despite some problems and disruptions in practice, according to the said declaration, those who would reopen the desolate and barren areas and make them fields would be given those places free of charge, and then the title deeds of these lands would be bestowed on them. The tithe would not be taken from the farmers for one year from the crops of the lands they have opened for agriculture and two years if the grounds were stony (i.e., not suitable for agriculture). If those who opened the land for agriculture planted cotton on these lands, the exemption from the tithe would be increased to five years. At the same time, the duration of the exemption would be ten years from its announcement. In these ten years, customs tariffs for cotton would not be changed, and the same rates of customs would be taken from all kinds of cotton, no matter how high-quality the cotton produced. In addition, it would be ensured that the cotton to be grown would be easily transported

to the piers and that the roads of the cotton cultivation areas would be repaired in case of damage. Furthermore, if cotton growers demanded to bring agricultural tools and machinery from Europe, customs would not be charged to them, and the costs of the tools and machinery that were thought to be brought in case of need would be covered by the state. Apart from this issue, instructions and pamphlets regarding the cotton farming method would be prepared and distributed to the regions where cotton was planted. Finally, an exhibition would be held every year in the cities and towns of the areas where cotton was grown, and samples of the cotton grown there would be exhibited, and those producing the highest-quality cotton would be rewarded.[300]

3.2 The role of scientific input

Despite some problems and deficiencies, from infrastructure to bureaucracy, cotton cultivation efforts are seen in a vast geography from Edirne to Trabzon and Trabzon to Cyprus.[301] Although many details have been omitted, another important aspect is missing from the narrative. The role of scientific and technological input and the exigency for this input by different segments of society lingered in the background in many academic studies. Nonetheless, even when the press of the period is delved

[300] BOA, İ.MVL 462/20815, 19 Şaʿbān 1278/19 February 1862; BOA, HR.SFR.3 70/22, 13 Cemāz̲īyyü'l-evvel 1279/6 November 1862; "Pamuk Zirāʿatiniñ Tervīc ve Tekṣīri Ḥaḳḳında Erzān Buyurulub Muḳaddemce Beyān-nāme-i Maḥṣūṣ ile Neşr ve iʿlān Olunan Müsāʿadāt-ı Seniyye Fıḳarātıdır [26 Receb 1278/27 January 1862]," in *Düstūr* [Tertīb I] (1289 [1872/1873]), 2:437; and US Congress, House, *Executive Documents: Printed by Order of the House of Representatives During the Third Session of the Thirty-Seventh Congress. 1862–'63. In Twelve Volumes* (1863), 574–76. The relevant decisions were also published in the British press. Another interesting point in one of the news was that attention was drawn to the dissemination of scientific knowledge: "The [g]overnment also promises to diffuse, by lectures and treatises, a knowledge of the subject, and to institute periodical exhibitions, at which the best growths will be rewarded with prizes." "Cotton in Turkey," *The Leicester Mercury*, 1 November 1862, 2. For incentives in this direction, please see BOA, A.}MKT.UM 567/92, 25 Z̲i'l-ḳaʿde 1278/24 May 1862. According to the news of *The Bradford Observer*, in 1862, cotton became a regular export item for the first time in Turkey's trade history. "Turkish Cotton," *The Bradford Observer*, 31 July 1862, 3. In 1862, a sudden increase in cotton prices is noticed. Panza, "Globalisation and the Ottoman Empire," 216.

[301] BOA, A.}MKT.MHM 255/84, 23 Şaʿbān 1279/13 February 1863; BOA, A.}MKT.MHM 259/97, 19 Şevvāl 1279/9 April 1863; BOA, A.}MKT.MHM 262/67, 17 Z̲i'l-ḳaʿde 1279/6 May 1863; and BOA, A.}MKT.MHM 264/7, 6 Z̲i'l-ḥicce 1279/25 May 1863.

into, it can be noticed that the gravity of scientific and technological input is also mentioned as much as infrastructure problems.[302] It is possible to stumble upon many publications as "sensory actors" revealing that scientific and technological input is far-reaching enough to be a thesis/dissertation topic in this period. Among these publications, James Lewis Farley's statement best expresses the importance of institutionalising modern science in those days: "It is obvious that a single discovery in applied chemistry, which may be hourly made in any of the thousands of laboratories in Western Europe or America, might have the effect . . . ."[303] If a more local precedent is sought within the context of the Ottoman Empire, the use of the concept of "science" in an official state document itself is also encountered. In the printed French text of the speech made by Sultan Abdülaziz on the improvement of the administrative regime, there are references to the "progress" of "science," its tools and resources.[304] Publications that drew attention to the gravity of scientific and technological developments and the urgent need for their transfer started to attract attention before the American Civil War and inflated their discursive power during the war. In a request written to the Grand Vizier's office by the CSA in Britain in 1858, it was stated that they demanded the pamphlet, which was adopted by the

[302] Although it is not explicitly found in Ottoman sources, the British describe it as a "scientific mission" to locate and ameliorate a suitable place for cotton cultivation in the region. Cotton Supply Association, *Cotton-Culture in New or Partially Developed Sources of Supply. Report of Proceedings at a Conference Held on Wednesday, August the 13th, 1862, in the Council Room of the Royal Horticultural Society, South Kensington, London, between a Deputation from the Cotton Supply Association, Manchester, and Commissioners with Other Representatives of Countries Showing Raw Cottons in the International Exhibition* (1862), 23.

[303] Farley, *Turkey*, 247. This age can be characterised as the *age of experts* and piecemeal *specialisation*. Renaissance polymaths are now out of fashion. So much so that there was a specialisation even in brokerage. For a comprehensive narrative about the specialisation in brokerage, please see Frangakis-Syrett, "Uluslararası Önem Taşıyan Bir Akdeniz Limanının Gelişimi," 38.

[304] "Nous devons maintenant au *progrès de la science* de tels perfectionnements dans le système des armes, et sous d'autres rapports, qu'un Gouvernement qui se respecte et qui est soucieux de ses droits, se trouve forcé de le suivre autant que le lui permettent ses moyens et ses ressources." [We now owe to the *progress of science* such improvements in the system of arms, and in other respects, that a government which respects itself and which is concerned about its rights, finds itself compelled to follow it as far as its means and resources permit.] BOA, HR.SFR.3 154/22, 19 May 1869 (emphasis added).

commission, to be translated into Turkish.[305] In the same year, a deputy named Carlton, sent by the commission, visited and examined the cotton-growing areas, such as Aleppo, Algiers, Ankara, Baghdad, Beirut, Bursa, Crete, Damascus, Edirne, Erzurum, Harput, Izmir, Kastamonu, Konya, Kurdistan, Mosul, Saida (Sayda), Sivas, Thessaloníki, Trabzon, and Tripoli, and distributed American cotton seeds free of charge to farmers in these regions.[306] This was just one of the signs that the CSA desired to make the Ottoman dominions alternative sources for raw cotton.

In an article published in the *Tercümān-ı Aḥvāl* (Interpreter of Events) dated 13 Ṣafer 1278 [20 August 1861], Mehmed Şerif Efendi, as a sensory actor, expresses the need for *fünūn* (plural of *fenn*)[307] for cotton cultivation.[308] In this article, it is recognised that the debate, which was discussed in the *Cerīde-i Ḥavādiṯ* at the beginning of 1840, still persists as to whether industry or agriculture is more beneficial for Turkey. Even though some steps have been taken in both agriculture and industry in the intervening two decades, the continuation of the discussion is an indication that there has not been an overriding decision yet. According to Mehmed Şerif Efendi, priority and emphasis should be given to the development of

[305] BOA, İ.HR 160/8533, 13 Ṣafer 1275/22 September 1858. This translation will appear two years later. Since it was written before the American Civil War, historical details that are trivial in the eyes of the reader are given extensive coverage. Afterwards, cotton types that could be planted in the Ottoman lands were introduced. It is underlined that the species that could be planted and cultivated in the Ottoman world ought to be tested beforehand, and it would not be propitious to grow cotton without experimenting on it. In addition, the dangers that may arise to the crop are explained in detail. It is possible that this exhaustive account not only warned the farmers but also discouraged them. BOA, HR.SYS 1889/37, 17 Cemāẕīyyü'l-āḫir 1277/31 December 1860.

[306] BOA, HR.MKT 240/10, 16 Şevvāl 1274/30 May 1858. The foreign press would often mention that these free cotton seeds distributed throughout the course of the American Civil War boosted up productivity. "Turkish Cotton," *The Leicester Chronicle or Commercial and Leicestershire Mercury*, 6 August 1864, 2.

[307] The translation of this word, what it means exactly in English, or if there is any equivalent, is a subject far beyond the scope of the thesis. That is why it is used in its original form.

[308] *Tercümān-ı Aḥvāl*, no. 68, 13 Ṣafer 1278/20 August 1861, 2–3. Mehmed Şerif Efendi was the brother of Münif Pasha. He taught *ʿilm-i emvāl-i milliyye* (the *ʿilm* of national assets; a sort of political economy) in the first *Mekteb-i Mülkiyye*, which was established in 1859. He was the first person to teach what is closest to "economics" in Turkey. Kılınçoğlu, *Economics and Capitalism in the Ottoman Empire*, 39.

agriculture. In industry, on the other hand, time was needed to reach the range reached by Europe. However, the aspect of agriculture could be created in a short time with little "*himmet* (benevolence)."[309] Based on Mehmed Şerif Efendi, who emphasised the time factor in Europe, by saying, "Avrupalularıñ emtiʿa-i mütenevviʿayı ehven ṣūretle yapabilmek yolunı bu bābda ṭabīʿatıñ kendülerine aṣlā yardım itmediği ḥālde mücerred mürūr-ı aʿṣār ile ḥuṣūle gelen mehāret ve melekeleri vāsıṭasıyle . . . ," [the way of the Europeans to produce various commodities easily, although nature never helped them in this sense, only through the skills and faculties that emerged with the passage of centuries . . . ,] the fault of the Ottoman Empire was to be lax in the fields of agriculture, trade, and industry from the very beginning.[310] It was an indisputable fact that Mehmed Şerif Efendi studied the political economy of the West well. Still, it is not possible to talk about a detailed roadmap and plan that would bring these ideas to life. Instead, the support that should be given to agriculture, trade, and industry is described in rounded terms: ". . . ṣanāyiʿ fünūnı ve fünūn ise serveti ve servet ise zirāʿat ve sāʾireye yol virecek ṭuruḳ-ı müteʿaddideyi vely ider." [. . . industry emerges by following *fünūn*, and *fünūn* by wealth, and wealth by various paths that lead to agriculture and the like.][311] Despite these rather abstract, general, and superficial ideas for embodying an overall government policy, it is remarkable that Mehmed Şerif Efendi underlines the "fünūn" dimension during the American Civil War. Because the circulation of information is essential not only for Mehmed Şerif Efendi but also for other actors, such as the CSA.[312] Secondly,

[309] *Tercümān-ı Aḥvāl*, no. 68, 13 Ṣafer 1278/20 August 1861, 2–3. It is possible to come across this understanding in earlier texts. For example, according to Ionescu, cotton farming is one of the safest and surest means of economic independence. Hunt, "The Culture of Cotton in Turkey," *Hunt's Merchants' Magazine* (February 1852): 156–59. It seems that the arguments for economic independence go much further back in Egypt. Owen, *Cotton and the Egyptian Economy*, 82.
[310] *Tercümān-ı Aḥvāl*, no. 68, 13 Ṣafer 1278/20 August 1861, 2.
[311] *Tercümān-ı Aḥvāl*, no. 69, 15 Ṣafer 1278/22 August 1861, 4.
[312] The goals of the CSA were not goals that a single actor could handle. Maybe that was why Henderson said there was "somewhat amateurish spirit" in the CSA's work. He took an approach with

compared to other products of high commercial value, cotton cultivation needed close monitoring throughout the production process, and it also needed to follow up the information engendered by the United States as experts in the States took many steps, diffused technological innovations in the cultivation of this product, and produced a new knowledge base on its cultivation. Therefore, in the first months of the American Civil War, in the issue of the *Cerīde-i Ḥavādiṯ* dated 6 Cemāẕīyyü'l-āḫir 1278 [9 December 1861], a detailed article was written about where and how cotton would be planted, what precautions should be taken to grow cotton, and how to deal with harmful insects that plagued cotton.[313] With the Cotton Famine precipitated by the American Civil War and the cotton textile industry's turn to alternative sources, publications and discussions on agricultural economy also soared in the Ottoman Empire. For example, Mehmed Şerif Efendi ends his article with the following sentences:

> Şimdi burada bir suʾāl īrād olunabilür ki zirāʿatde kullanılacak makine ve ālātiñ īcād ve istiʿmāliyle cedāvil ve yollarıñ iʿmāli ve fenn-i zirāʿatiñ tedrīsi neye maḥṣūṣdur el-cevāb fünūna bu fünūnuñ tedrīsi neyi müntic olabilür ṣanāyiʿ ve zirāʿatiñ yol almasını bunun yol alması neyi intāc ider şübhesiz serveti işte maṭlūb-da budur bunuñla her şeyʾ yapılur. [Now, a question can be asked here: What are the purposes of the invention and use of machinery and tools to be employed in agriculture along with the construction of roads and the teaching of *fenn-i zirāʿat*? The answer is *fünūn*. What can the education of this *fünūn* entail? The advancement of industry and agriculture. What does this lead to, then? Undoubtedly, wealth, that is what is demanded. Everything is done with it.][314]

In addition to these, another journal called the *Mecmūʿa-i Neẓāret-i Ticāret* (Journal of the Ministry of Commerce) began its publication life in 1863, which would provide useful information to the public on trade, craft, and agriculture as a

classic British irony: "It seemed to assume that anyone could grow cotton by following the instructions printed in leaflets." Henderson, *The Lancashire Cotton Famine*, 38.

[313] *Cerīde-i Ḥavādiṯ*, no. 1069, 6 Cemāẕīyyü'l-āḫir 1278/9 December 1861, 2–3. It has not been very successful in this regard. In 1866, lice could still be seen in the cotton bales sent from Izmir to Manchester. BOA, MVL 723/99, 26 Cemāẕīyyü'l-evvel 1283/6 October 1866.

[314] *Tercümān-ı Aḥvāl*, no. 69, 15 Ṣafer 1278/22 August 1861, 4.

sensory and transmitter actor.[315] Brochures about cotton cultivation specific to the regions were distributed as well. For example, Turkish and Greek pamphlets were sent to Yanya (Ioannina).[316] It is known that an agricultural bulletin was sent to Âlî Pasha from the Ottoman Embassy in London.[317] Thus, various objects played a vital role in conveying and disseminating knowledge. At times, they exceeded the power and influence of man. Moreover, they avoided treating what was experienced at a pre-given level as if they were fantasies put together by people. These publications are also among the sensory and transmitter actors, in which the recommendations of the foreign press for cotton cultivation, namely the introduction of new seeds, the replacement of old agricultural techniques, and the utilisation of effective cotton gins, are repeated.[318] These recommendations were implemented with limited resources. For instance, cultivation areas were determined by the cotton farming commissions to be established, American exotic seeds were imported and distributed, the tithe was taken from the cotton produced per acre, and the cotton customs tariffs were determined and remained in force for at least ten years.[319]

Many examples reveal how vital the transfer and dissemination of knowledge is for cotton. One of the subjects in which scientific knowledge was most necessary

[315] BOA, A.}MKT.MHM 262/58, 16 Ẕi'l-ḳaʿde 1279/5 May 1863. Some of the anecdotes from foreign newspapers about cotton cultivation were also translated into Turkish in this period. BOA, HR.TO 442/25, 13 August 1862. Articles published abroad on Ottoman agriculture and industry were also closely followed. For example, the publication of Achille Brodin-Collet, published in *La Célébrité : industrielle, artistique et littéraire*, the organ of *l'Institut polytechnique universel*, aroused great interest. BOA, HR.TO 441/29, 18 September 1862.

[316] ". . . pamuk zerʿi ve ḥarāṣeti içün vāżıḥ ʿibārāt ile tanẓīmi mevʿūd olan risāleleriñ bir ṭarafı Türkçe ve bir ṭarafı Rumca olarak miḳdār-ı kāfī nüsḫasınıñ hemān irsāli . . . ." [. . . immediate dispatch of a sufficient number of copies of the pamphlets, which were promised to be issued with precise phrases for cotton agriculture, one side in Turkish and one side in Greek . . . .] BOA, A.}MKT.NZD 424/67, 15 Ẕi'l-ḥicce 1278/13 June 1862.

[317] BOA, HR.SFR.3 64/56, 8 May 1862.

[318] "Cotton Cultivation in Turkey," *The Dundee Courier*, 1 June 1863, 1.

[319] BOA, A.}MKT.MVL 144/58, 16 Şevvāl 1278/16 April 1862. These developments were not sufficient for British entrepreneurs. Their expectations were for the complete abolition of the tithe, and these expectations were not met at the end of the day. Watts, *The Cotton Supply Association* (1871), 64.

was the locust problem. For example, in 1864, it was reported that locusts damaged cotton crops in both Aydın and Saruhan[320] as well as Tırhala.[321] The literature on the measures taken in this regard is limited, and there are documents and bad news about the damage caused by the locusts to the farmers rather than the effective fight against them. So much so that in the *Taṣvīr-i Efkār* (Description of [Public] Opinion[s])[322] report stating that all necessary measures have been taken to increase cotton production, an annotation is made that a desired escalation will occur if the locusts do not harm the crop.[323] Considering that the value of the cotton transported from Anatolia to Izmir in 1863 reached 4 million liras, and the value of the cotton exported from Anatolia and Rumelia reached 9 million liras, the impotence of value production of this magnitude against the locusts was thought-provoking and also indicated that effective and adequate measures could not be taken against the locusts. Nevertheless, this problem needed an urgent solution because those who would purchase cotton paid attention to its pest resistance, high crop yield, and whether the fibre was silky, and they made their selections based on these criteria. This was the reason why American planters did more experimental work with cotton than other planters, namely to procure the best type of cotton.[324] In this period, when the commercial competition intensified so much and industrial agriculture expanded its borders further to the east, the prominence of knowledge and information faced its golden age. The reason for the cotton boom, especially in the southern states of the

[320] *Taṣvīr-i Efkār*, no. 193, 2 Z̲i'l-ḥicce 1280/9 May 1864, 1.
[321] *Taṣvīr-i Efkār*, no. 198, 23 Z̲i'l-ḥicce 1280/30 May 1864, 1.
[322] While deciding on the translation, a column of İbrahim Alâeddin Gövsa was used. Gövsa writes in this column, ". . . *taṣvīr-i efkār* means the description of ideas. There is no need even to ask what ideas are meant to describe. It is apparent that the ideas of the people and the general public are meant. In other words, the original name given to the newspaper is the *Taṣvīr-i Efkār-ı ʿUmūmiyye*. And because this form is too long, the word *ʿumūmiyye* at the end has been removed, causing the composition to be shortened." Gövsa, "Efkar-ı Umumiye," *Yedigün*, no. 313, 7 March 1939, 8. This anecdote has been given with a direct translation into English.
[323] *Taṣvīr-i Efkār*, no. 143, 26 Cemāz̲īyyü'l-evvel 1280/8 November 1863, 1.
[324] Hayter, "Expanding the Cotton Kingdom," 226.

United States, was not only the manoeuvrability skills and the capacity of the capital owned by the growers there. Since the spread of new species of cotton in the 1790s and the proliferation of (Eli) Whitney's cotton gin (1793) from one farm to another, scientific knowledge has become increasingly crucial and has gone through a parallel process with the institutionalisation of nineteenth-century science.

While examining cotton cultivation and production in Ottoman Empire during the American Civil War, many foreign or hybrid press were ignored. Nonetheless, it is also possible to find discussions about cotton in these publications. The most compelling example that can be given is *The Levant Quarterly Review of Literature and Science*.[325] Dr Richard Ford Foote, who came to Istanbul after the Crimean War, was a medical practitioner who began his career by exposing the abuses he witnessed at the Pauper Lunatic Asylum in Norwich.[326] During his years in Istanbul, he continued to be closely interested in medical studies and wrote articles for *The Sanitary Review and the Medical Circular*.[327] He undertook the editorship of *The Levant Quarterly Review* by establishing a branch of the National Association for the Promotion of Social Science in England.[328] The first issue of the journal was published in July 1860; it was published quarterly and continued until September 1863.[329] The place of publication of the journal was, precisely as in the journal, No. 1, *Rue de la Banque*, Galata.[330] The journal defined its mission as: "A [j]ournal

[325] The only piece written about the journal in question was Şeref Etker's contribution published in *Kebikeç*. It would be correct to describe it as a publication presentation rather than an academic article. In his article, Etker mentions where the journal is registered in which inventory and the content of the journal. Etker, "The Levant Quarterly Review," 139–42.
[326] Foote, "Reviews. The Levant Review of Literature and Social Science," *The Social Science Review, and Journal of the Sciences* (1 July 1864): 61.
[327] Ibid.
[328] Ibid.
[329] After Dr R. F. Foote died on 17 June 1864—he was only thirty-seven years old when he died—the journal did not continue its publication life.
[330] "Literature. Commercial Literature. *The Levant Quarterly Review of Literature and Science*," *The Economist*, 6 October 1860, 1096–97. *Rue de la Banque* is that tiny street where St Pierre Han is located. Therefore, it is not the main street, namely Voyvoda Caddesi (i.e., Bankalar Caddesi). Its current name is Eski Banka Sokak.

devoted to original communications, reviews, retrospects, reports of learned societies, and the latest discoveries in [s]cience, together with mercantile and other miscellaneous information, interesting to all who are in any way connected with the Levant." A review published in *The Economist* praised the journal's mission but stated that its appearance was unimpressive, typography was problematic, and there were numerous printing errors.[331] One of the three most prominent articles as specified by critics in the first issue is Foote's article "On the Necessity of a Levant Quarterly Review of Literature, Science, and General Information," a review of Xavier Heuschling's *L'Empire de Turquie* (1860), and William Sandford's article entitled "Social Economy: On Cotton Growing in Turkey and Syria."[332] Besides all its scientific purposes, the journal also listed among its aims contributing to the development of agricultural activities in the Ottoman Empire.[333] Every article in the journal is valuable in terms of the social science debates and discourses of the period. Alongside Dr Foote and Hyde Clarke, Sir John Chardin and A. G. Paspati were among the journal's leading authors. The journal published in a wide range of topics from the education of Christian children in Egypt to the history of the Bulgarian provinces and from the languages of the gypsies to the socio-economic structure of Turkey. *The Literary Gazette*, one of the newspapers that commented on the magazine, underlined that most of the articles were well written, but they were too local in some places.[334] This criticism of the magazine's content also indicates that the locality was ignored.

[331] Ibid.
[332] Ibid., 1096. A news about the article was also published in the Istanbul press. "Chronique locale et faits divers," *Journal de Constantinople*, no. 1512, 28 March 1861, 3.
[333] Foote, "Reviews. The Levant Review of Literature and Social Science," *The Social Science Review, and Journal of the Sciences* (1 July 1864): 62.
[334] "The Levant Quarterly Review," *The Literary Gazette*, no. 115 [2275], 8 September 1860, 181.

The conclusion drawn from the article topics of the journal was that it attached great importance to the development of agriculture, and the journal's editorial policy was an ardent supporter of making this agriculture in the light of the most modern and scientific methods. In the magazine's first issue, the article entitled "Social Economy: On Cotton Growing in Turkey and Syria" draws attention to the following point: a reliable and fair order is required for capital. Last but not least, waiting for mültezims (tax farmers) to collect the tithe was bringing about serious trouble. Cotton was being damaged during this waiting. The tithe also turned out to be a bigger problem for the local people with the intervention of speculators. Therefore, the recommendation of William Sanford, the author of the article and a CSA employee, was for the government to give up this income item—at least for one season—and mobilise the market. He considers it appropriate to abolish the tithe and slightly increase the import tax and bases this proposal on economic experiments and experiences in Britain. Considering the Ottoman perspective on the tithe, this was not even a proposal worthy of discussion from the eyes of the Ottoman bureaucracy. Behind this proposal was the desire to fix each cotton production area to the conditions of the United States, ignoring regional differences, state capacity, and current circumstances.[335]

In addition to various initiatives and the publishing means, the British Literary and Scientific Institution was established in Pera, near the Misserie's Hotel.[336] *The Lancet* cites April 1860 as its founding date and Sir Henry Bulwer[337] as

[335] Sandford, "Social Economy: Conditions of Industrial Success. On Cotton Growing in Turkey and Syria," *The Levant Quarterly Review of Literature and Science* (July 1860): 56; and "Literature. Commercial Literature. *The Levant Quarterly Review of Literature and Science*," *The Economist*, 6 October 1860, 1096.
[336] "The Constantinople Association of Pilots," *The Mercantile Marine* (October 1860): 313.
[337] Sir Henry Bulwer also published an article on aesthetics of poetry called "Original Poetry: The Power of the Steam" in *The Levant Quarterly Review*; that is to say, he was in the world of culture and art as well. "The Levant Quarterly Review." *The Literary Gazette*, no. 115 [2275], 8 September 1860, 181.

the institute's president.[338] On the night of 22 April 1861, in his speech at the renovated British Embassy in Pera, Bulwer addressed the members of the British Literary and Scientific Institution.[339] Among the guests of this speech were diplomats, lawyers, bankers, priests, medical doctors, social scientists, men of letters, engineers, and mechanical technicians who have shaped the social life of Istanbul and taken critical positions in the leading institutions and communities of socio-economic and political life.[340] All of these people can be considered as sensory actors. Nonetheless, some of them have also been transmitter and entrepreneurial actors. The only function of the society was not to be a gentlemen's club where politics or literature would be discussed. The purpose of this institution, similar to the Syllogos of the Greek community and the *ʿOs̲mānlı Cemʿiyyet-i ʿİlmiyyesi* (Ottoman Literary Society) of the Muslim subjects, was to help the *formation* of a public opinion in the fields of the natural sciences, engineering, medicine, social sciences, and literature. This structuring can also be compared to the aforementioned gentlemen's clubs that have existed in Britain for a long time, especially since the eighteenth century.[341]

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[338] "The Levant Quarterly Review of Literature and Science. Edited by R. F. Foote, M. D.," *The Lancet* (10 November 1860): 465.
[339] Kentel, "Drawing Cosmopolitan Pera," 63.
[340] Ibid. It is not yet known how much these and similar associations or "clubs" include women and children. In this context, these institutions should not be characterised as micro-societies from which we can map social relations. Yet, the history of these institutions is essentially narratives made up of conversations, rumours, and gossip. The walls are the only witnesses of these conversations, fights, dreams, and even the various plans prepared to bring them to life.
[341] ". . . ʿulūm-ı ʿāliyye ve fünūn-ı sāmiyyeniñ merkez-i istiḥṣāli pāy-i taḫt-ı şehinşāh-ı maʿdelet-intimāʾ ve ṣanāyiʿ-i ġarībe ve meʿārif-i ʿacībeniñ muḳırr-ı istikmāli ḳıṭʿa-i Avrupa olarak ehālī-i merḳūmeniñ her biri birer ṣūretle evḳāt-güẕār ve taḥṣīl-i maʿlūmāta ṣārif-i nuḳūd-ı bī-şümār oldığı miṣillü Londra ehālī ve sekenesi dahi kemāl-i ṣafāʾ-yı bāl ile imrār-ı evḳāt itmek ve istediği fenn ü maʿrifeti sühūlet ile derece-i ḥuṣūle getürmek üzere kulüb [*club*] nāmıyle nām-dār olan cemʿiyyet-gāhlar tertīb ve taḫṣīṣ ve bir kaç biñ kīse akçe ṣarfıyle ebniye-i ẕarīfeler inşāʾ ve tarṣīṣ itmişler ve şu vechle bir ḳāʿide-i müstaḥseneye rabṭ eylemişlerdir . . . [;] cemʿiyyet-gāh-ı meẕkūrda her bir ʿulūm ve fünūn ve meʿārif ve müriṣ-i ẕevḳ ü sürūr olan luʿbiyyāt ü leṭāʾif mevcūd ve her biriniñ mevāḳiʿ-i maḫṣūṣaları rū-nümūd olub ehālī-i merḳūme maḥāll-i meẕkūreden birine yazılarak maʿlūmāt-ı meşrūḥadan kangısına [hangisine] mecbūr ise be-her gün oraya gidüb hem-meşrebleriyle imrār-i vaḳt ider." [. . . as the centre where the *ʿulūm-ı ʿāliyye* and *fünūn-ı sāmiyye* are produced, the European continent where the astonishing "industry" and strange "skills, arts, and knowledge" are developed to the highest degree, every people in this continent spends unlimited money to make good use of their

Even though in a review on *The Levant Quarterly Review* in *The Literary Gazette*, the purpose of the British Literary and Scientific Institution is presented as developing relations between the British and Levantine population living in Istanbul, creating an intellectual environment, and promoting intelligence, more detailed studies on the subject are required.[342] Because the existing studies do not say anything about who from the Ottoman subjects participated in the institute's activities. However, the lecture given by Alfred Augustus Fry[343] at the institute was turned into a booklet and published in *The Levant Herald*'s office (as in the newspaper, No. 28, *Rue Yazidji*, Teké, Pera). Societies included in the dedication part of the book are: ". . . the Members of the British Literary and Scientific Institution in Pera, of the Mechanics' Institution at Haskeui [Hasköy], and of the Literary Society at Ortakeui [Ortaköy]."[344] As can be deduced from the dedication of this lecture, which was given and written on Lord Macaulay and his literature, the ʿOs̲mānlı Cemʿiyyet-i ʿİlmiyyesi had a relationship with these communities. The members of the ʿOs̲mānlı Cemʿiyyet-i ʿİlmiyyesi may have participated in the activities of other societies as well. Nonetheless, reducing the institute's work to a purely intellectual pursuit is not correct. It should not be forgotten that the Levantines of Galata and Pera brought about a totally different world in Istanbul with their unique lifestyles and habits that shaped around them since the second half of the nineteenth century. In Galata, there were printing houses, newspaper publishing houses, bankers,

time and to collect knowledge; similarly, the people and residents of London established societies and associations called "clubs" to spend their time and obtain the knowledge and ingenuity they want with ease, even they built elegant buildings with the expenditure of a few thousand purses of *akçe* and bound these associations to admirable rules on this road . . . [;] in the aforementioned societies, there are every "*ʿulūm ve fünūn*," "*meʿārif*," and "*luʿbiyyāt ü leṭāʾif*," each having its own special place, and the people mentioned are registered to these clubs, and, whichever they have to, go there every day and spend time with their interest groups . . . .] *Seyāḥat-nāme-i Londra* (1269 [1852/1853]), 27–28.

[342] The Levant Quarterly Review." *The Literary Gazette*, no. 115 [2275], 8 September 1860, 181.

[343] A British barrister-at-law.

[344] Fry, *A Lecture on Lord Macaulay* (February 1861), 3.

lawyers, and doctors' offices, and many various workplaces, while Pera was rather an aristocratic settlement that developed under the leadership of embassies. After the 1850s, with the coming together of miscellaneous groups, an utterly different urban space was formed in terms of social, cultural, and physical aspects.

Then, some fundamental questions to be asked in the context of the British Literary and Scientific Institution are: What was the founding purpose and objective of the institution? Did a society established before the Syllogos and the ʿOs̲mānlı Cemʿiyyet-i ʿİlmiyyesi set a precedent for these societies? If so, was this a one-sided process, given current academic debates on the history and philosophy of science and technology? Was the institution established only to meet the intellectual needs of foreign actors living in Istanbul? What were the socio-economic and political motivations that played a role in its establishment? After the Crimean War, when the economic activities of the British and Levantines in the Ottoman Empire proliferated exponentially, what sort of knowledge did these societies bring into being and put into use to promote modern sciences and technologies? Enquiring into the role of these societies in moulding the scholarly debates in the late Ottoman intellectual and socio-economic milieu as well as public and private initiatives might offer a contribution to the history of the development of the late Ottoman scientific debates. Such an investigation might also shed light on the impact that such societies had within the Ottoman Empire in the economic sphere and in the dissemination and construction of scientific knowledge.

The institution's public lectures were given weekly during the winter months. Researchers have yet to track down the participants of these public lectures. The institution had a chess room and an extensive library along with a news-room where

English and local newspapers and periodicals could be viewed and read.[345] The British, who have been to Istanbul, used to visit this institution, especially to follow the newspapers. For example, a British traveller writing to *The Nautical Magazine* noted that he found publications, such as *Punch and the Illustrated News*, *The Daily Telegraph*, *The Standard*, *The Malta Times*, *The Nautical Magazine*, *The Blackwood*, and *Chambers' Journal*, in the institution's library.[346] According to this traveller's account, in 1873, the institution had 200 members, and the lectures were hung on the wall of the reading room.[347] The piece of information that rendered the British Literary and Scientific Institution a part of the story of cotton in the Ottoman Empire was that the British embassy priest in Pera, Revd Mr Gribblé, gave a public lecture on cotton cultivation at the institution.[348] Unfortunately, no written record or narrative of this course has yet been found.

The above-mentioned institution, founded by the British in Pera, was not the first *scientific* society in the Ottoman Empire. An unspecified number of similar societies that existed in the empire prior to this institution were: *la Société orientale de* Constantinople (the Oriental Society of Constantinople), the Constantinople Mechanics' Institute at Haskeui (Hasköy), the Imperial Medical Society, the Levant Quarantine Association, the Committee on Railways, and the Smyrna Literary and Scientific Institution.[349] They were established by foreign actors, primarily British,

[345] "Turkey. The British Literary and Scientific Institution," in *Bradshaw's Continental Railway Guide* (February 1866), 498.
[346] "Correspondence. Constantinople.—British Library, Reading Rooms, and Lecture Hall. To the Editor of *The Nautical Magazine*," *The Nautical Magazine* (September 1873): 747.
[347] Ibid. In another narrative, it was stated that the number of members for the year 1861 was more than 200. "Mission of Constantinople," *The Mission Field* (1 February 1861): 38. When the organisational structures of other similar local societies are examined, it is noticed that the British Literary and Scientific Institution is imitated.
[348] "The Cultivation of Cotton in Turkey," *The Manchester Courier and Lancashire General Advertiser*, 17 January 1863, 8. It is noteworthy that Mr Gribblé taught cotton farming as a reverend at the institution. More extensive research is needed to find out where Gribblé's knowledge to give lectures on this subject comes from.
[349] "The 1859 *Shepherd's Oriental Yearbook* refers to the 'Smyrna Literary and Scientific Institution' at 19 Frank Street, with a reading room and library, stocking newspapers in many languages, and

who collaborated with local actors in the second half of the nineteenth century. While some of these societies gravitated towards the social sciences, others revolved around the natural sciences or other practical disciplines, such as medicine or engineering. Still, there are no academic studies investigating them. A close examination of the structures, members, and publications of these 'clubs,' whose numbers have increased since the second half of the nineteenth century, will change not only our knowledge of Ottoman cotton cultivation and production during the American Civil War but also what we know about the science that began to be institutionalised in the Ottoman Empire.

In addition to these societies, at a time when translation activities were increasing, a society called the Teʾlīf ve Tercüme Cemʿiyyeti was established within the *Meʿārif Neẓāreti* (Ministry of Education).[350] Münif Pasha, who also presided over the ʿOs̲mānlı Cemʿiyyet-i ʿİlmiyyesi and the *Mecmūʿa-i Fünūn*, assumed the presidency of the society.[351] The society, which started its activities in 1865, aimed to translate popular literary and scientific publications into Turkish.[352] Although no

holding Monday philosophical classes and Thursday lectures." There was also an English Club at the same address. Mansel, *Levant*, 165. It is seen in the records that the meetings of the Homer Masonic Lodge were held here. Lane, *Masonic Records* (1895), 319. The venue was also a hotel that provided a place for intellectual meetings. The institution's name, content, and structure signify that it is a branch of the British Literary and Scientific Institution. It was established before the British Literary and Scientific Institution, and it was more local compared to this society. The Literary and Scientific Institutions Act, which dealt with the opening and management of these societies in Britain and abroad, was adopted in 1854. Literary and Scientific Institutions Act, 1854, 17 & 18 Vict., c. 112. Some meetings of the Imperial Cotton Commission were also held here. US Congress, House, *Letter of the Secretary of State, Transmitting a Report on the Commercial Relations of the United States with Foreign Countries, for the Year Ended September 30, 1862* (1863), 577. It was written that in 1834, Frank Street was started to be paved with stones. Based on the common opinion of many travellers, this street was the most beautiful and most significant in Smyrna at that time. Today's structure starts from the east of Kemeraltı and extends to Pasaport, Cumhuriyet Square, and Alsancak. Demirbaş, *Rees Köşkü*, 23. One of the well-known figures who gave public lectures at the institution was Cyrus Hamlin. Hamlin's public lecture "The Problem of Freedom and Slavery in the United States" was later published as a pamphlet. In this work, Hamlin takes a stance favouring emancipation from slavery. Hamlin, "The Problem of Freedom and Slavery in the United States," *The American Presbyterian and Theological Review* (April 1863): 267.

[350] BOA, A.}MKT.MHM 336/37, 7 Ṣafer 1282/2 July 1865.

[351] BOA, MVL 873/80, 16 Şevvāl 1282/4 March 1866.

[352] BOA, İ.MVL 529/23733, 16 Ẕi'l-ḳaʿde 1281/12 April 1865.

publications on cotton have yet been identified among the work of this short-lived society—which is not surprising since its establishment coincided with the end of the American Civil War—it may be argued that it contributed to the scientific activities in the empire.

Within the scope of scientific input, among the most significant breakthroughs in the Ottoman lands was the distribution of pamphlets and treatises on cotton cultivation. One of the most comprehensive was the *risāle* published in the *Taḳvīm-i Ticāret* (Commercial Directory) on cotton agriculture belonging to an Ottoman subject whose name (or nickname) was Kadri in the *Cerīde-i Ḥavādiṯ*.[353] It is not possible to be sure that Kadri is the same person as Kadri, who is encountered in other publications, such as the *Mecmūʿa-i Fünūn*, since he does not have a title other than his first name to distinguish him from other figures of the period. For the same reason, it is ambiguous whether he took office in the *Tercüme Odası* (Translation Office) or the *Teʾlīf ve Tercüme Cemʿiyyeti* (Writing and Translation Society [of Books]). However, the mystery of his identity does not overshadow the importance of his publication. Newspaper anecdotes containing detailed information about the planting of cotton seeds were collected, and 1,500 copies were separately printed in the form of a pamphlet. William Churchill, the owner of the newspaper *Cerīde-i Ḥavādiṯ*, who covered the cost of the pamphlet, was paid 2,375 piastres by the government. In the state correspondences, it was highlighted that with the application of the methods described in the risāle, progress in cotton agriculture would be achieved in a short time.[354] In addition, at the very beginning of the risāle,

[353] Kadri, *Pamuk Zirāʿatine Dāʾir Olub Defʿa-i Evvelī Olmak Üzere Taḳvīm-i Ticāret'de Tabʿ ve Temṯīl Olunan Risāledir* (1283 [1866]). This risāle, which was published in the *Maṭbaʿa-i* (Printing Press) *Cerīde-i Ḥavādiṯ*, is also available in the Ottoman Archive (BOA). BOA, İ.MVL 560/25164, 9 Cemāẕīyyü'l-evvel 1283/19 September 1866.
[354] BOA, İ.MVL 560/25164, 9 Cemāẕīyyü'l-evvel 1283/19 September 1866.

dated 1 May 1866, it was pointed out that the negative impact of the peace in the United States on global cotton production would not pose a threat to the Ottoman Empire if the recommendations and instructions in the risāle were followed with strict attention to details. Stating that the topics, such as how, when, and how many times the fields to be planted cotton would be ploughed according to the type of land, how to plant cotton seeds, and what points to pay attention to, would be discussed within the scope of the risāle, Kadri reported that the points to be considered during the harvest would also be mentioned.

Although it is said at the beginning of the pamphlet that the agriculture of some crops is not reasonable in compliance with the political economy of the period due to the agricultural prices, cotton is not included among these crops.[355] In the pamphlet, which also drew attention to the heightened cotton prices attributable to the American Civil War, it was written that one ḳıyye wheat was sold for 15-20 piastres. In contrast, a ḳıyye cotton was sold for one piastre. One of the main arguments of the pamphlet was that cotton cultivation would be beneficial for land reclamation. In this respect, it is seen that the risāle aims to persuade the agriculturalists to cotton farming. Since the text of Kadri coincided with the end of the American Civil War, he was most probably aware of the possibility of a plunge in the price of raw cotton with the re-entry of the United States into the cotton market after the war. Bearing in mind the *Cerīde-i Ḥavādiṯ*'s publications to promote cotton

[355] "İstiʿmāli ʿumūmī olmıyan baʿż-ı maḥṣūlāt zirāʿatinden her ne-ḳadar menāfiʿ-i kesīre müşāhede olunursa da *ekonomi politik* [political economy] ḳāʿidesince müṭālaʿa olundığı ḥālde bu maḳūle maḥṣūlātıñ külliyyet üzere zerʿ olunması cāʾiz değildir çünki maḥṣūlāt-ı meẕkūre lüzūmundan ziyāde ḥāṣıl oldığı ḥālde fīʾātca żarūrü'l-vuḳūʿ olan tedennī zürrāʿ ṭāʾifesini maḥṣūlāt-ı meẕkūre zerʿinden ferāgata mecbūr ideceği der-kārdır." [Even though many benefits are observed from the cultivation of some crops whose use is not general, when examined by the rules of political economy, it is not appropriate to cultivate such crops as a whole, because it is apparent that if the aforementioned crops are produced more than necessary, the decrease in prices will force the agriculturalists to renounce the agriculture of the mentioned crops.] BOA, İ.MVL 560/25164, 9 Cemāẕīyyü'l-evvel 1283/19 September 1866 (emphasis added).

cultivation since the advent of the American Civil War, it was natural for him to include current debates in the pamphlet published by the newspaper's own printing house and to refute the arguments that would break belief in cotton agriculture. According to Kadri, the end of the American Civil War eliminated the urgent need for raw cotton. He considered it absolutely feasible to gain market share if adequate effort and time were spent and American cotton seeds were planted and grown to a high quality. In addition, he deemed the proximity of the Ottoman Empire to Europe an advantage.[356]

The first improvement needed, according to Kadri, is to abandon the hitherto used native seeds and generalise American seeds instead. It was the most successful strategy of the period. He compares types of cotton with one another and concludes that the Sea Island is of higher quality. However, since there are different varieties of cotton seeds in America, the species of cotton seed that is more suitable for the Ottoman geography, as the experience dictates, is the New Orleans seed.[357] He also states that in the absence of this seed, the use of Egyptian cotton seed is also appropriate. Sharing the characteristics of suitable soil structure, such as when the land is soft, stone-free, and the soil is deep and rich in minerals, Kadri mentions which soil structures are not suitable as well, for example, clayey soil. He attributes the unsuccessful cotton trials to the planting of the cotton in the wrong soil. Kadri also pays attention to the fact that Anatolia is still a geologically young land formation. Thus, he elaborates on the differences between the southern regions of the

[356] BOA, İ.MVL 560/25164, 9 Cemāz̲īyyü'l-evvel 1283/19 September 1866.
[357] There is an example that confirms Kadri's claim. Nâmık Pasha's Sea Island cotton (*Gossypium barbadense*) trials in Diyarbakır were unsuccessful. Taylor [Consul], "Turkey. Diarbekr. Report of Mr. Consul Taylor, on the Trade of the Pashalik of Diarbekr for the Half-Year Ending December 10th, 1862," in *Commercial Reports Received at the Foreign Office from Her Majesty's Consuls between January 1st and June 30th, 1862* (1863), no. 3229, at 70:478–79.

United States and Anatolia. Apart from the rest, he brings up the absence of a capital-owning agricultural class.[358]

Another *quasi-scientific* observation Kadri makes is that strong winds are not reckoned with in cotton farming. Nevertheless, the cotton plant should be protected against the sharp winds blowing from the north and south in the Ottoman geography, and ideally, it should face the west. The cotton plant, which has its back to the northern and southern winds, should stand against the sun, and the field where it is planted should be moderately humid. In autumn, the fields should be ploughed as quickly as possible, and the soil should be left fallow at appropriate times until the seed is planted. The pamphlet complains that the farmers do not leave their fields fallow and do not fertilise the soil. Besides, according to Kadri's assertion, these saplings are either fed to animals or used as wood instead of being used as natural fertilisers. For this reason, cotton grown on land that is not fallowed and left without fertiliser cannot keep up with the harsh conditions of nature.[359]

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[358] ". . . ṣarfı lāzım gelen ser-māyeye mālik olmıyan zürrāʿ ṭāʾifesine uṣūl-i meẕkūreyi ḳabūl ve icrāʾ itdirmek şimdilik mümkün olamaz bir tarlaya toḫum zerʿinden evvel toprağıñ ḥālini bilmekliğiñ ne derece ehemmiyyeti oldığı ilerüde beyān olunacak taʿrīfātdan añlaşılur eğer zirāʿat olunan tarla ekilen toḫuma müsāʿid değil ise idilen meṣārif beyhūdeye gider ve bu meṣārif-de az bir şeyʾ değildir." [. . . for the time being, it will not be possible for the agriculturalists who do not have the capital to be spent to accept and implement the aforementioned procedure. How important it is to know the state of the soil before planting seeds in a field will be understood from the recipes that will be declared later. If the cultivated field is not suitable for the seed sown, the expenses will be in vain, and these expenses are not small.] BOA, İ.MVL 560/25164, 9 Cemāẕīyyü'l-evvel 1283/19 September 1866.

[359] "Pamuk ekilen tarlalara gübre vażʿı uṣūlü istiʿmāl olunmadıkca Amerika ve maḥāll-i sāʾireden aʿlā cins pamuk toḫumı celb ve zirāʿatiñ hiçbir fāʾidesi görülemez bu ḥuṣūṣ tecārib-i mükerrere ve fiʿiliyyeye müstenid oldığından iştibāh idecek yeri olmıyub hemān ḳabūl ve icrāʾsı lāzım gelür." [Unless the method of adding fertiliser to the fields planted with cotton is used, there will be no benefit in bringing and farming the best kind of cotton seeds from America and similar places. There is no room to doubt that this issue is dependent on repeated experiences and actions, and it needs to be accepted and executed immediately.] BOA, İ.MVL 560/25164, 9 Cemāẕīyyü'l-evvel 1283/19 September 1866. In this section, Kadri compares the Ottoman Empire with Egypt and states that there is no need for industrial fertilisers in Egypt due to the tides of the Nile and that its land does not need fallow. Fowler, *Report on the Cultivation of Cotton in Egypt* (1861), 13. Essential details of cotton planting, cleaning, and sales began before the American Civil War and persisted until after the war. There were cases where outlandish pieces such as matches were found in the cotton bales taken from Izmir and the cleaning was not taken care of. This type of news was a heavy blow to the manufacturer and the seller. "Smyrna Cotton," *The Guardian*, 18 March 1865, 5. Therefore, it is possible to think of many newspapers as also pamphlets. In the United States, publications such as *De Bow's Review* have undertaken the mission of informing farmers about cotton. Beckert, *Empire of Cotton*, 115. However, considering that some newspapers remained local, the pamphlets that were prepared may have been

Stating that the *sarclage* (hoeing/weeding) method is the most costly and time-consuming, Kadri says that in some regions of Balıkesir and Aydın, children employed in this job are given seven piastres per day and adults fourteen to fifteen piastres daily—he speaks of four-hundred to five-hundred piastres per day for some extensive lands. Notwithstanding that the method's difficulty is mentioned, the story of the workers remains in the shadows once again since it is a very mechanical and goal-oriented pamphlet. Even though there are some narratives about women workers, women are not directly included in this pamphlet. Most of the methods mentioned are defined as "*uṣūl-i cedīde* (new method[s])." It is addressed that although these methods and tools may seem expensive at first, they will eventually reduce costs. On the one hand, he says that the drainage method, which is one of these new *uṣūl*(s), is not suitable for the Ottomans because it requires capital. But on the other hand, he also talks about this method for those who can afford it. After the implementation of this method in Britain, the value of the land grew threefold. This may indirectly indicate that small producers were in the majority in the Ottoman Empire. After delineating how some "*taḳlīd*s (imitations/simulations)" of the drainage method can be implemented, attention is drawn to the mistakes made in the cotton harvest. The last issue touched upon in the pamphlet is the urgent need for people who know how to use imported machinery.[360]

used to reach a wider audience. "Smyrne et son commerce d'exportation," *Journal de Constantinople*, no. 4428, 26 July 1864, 1. In addition, short incentive statements were already sent to the provinces suitable for cotton cultivation. BOA, A.}MKT.UM 566/48, 20 Ẕi'l-ḳaʿde 1278/19 May 1862.

[360] ". . . makine gāyet sāde görinürse de ḥaḳīḳatde pek ziyāde muṣannaʿ ve nāzik bir şeyʾ oldığından tecrübesi sebḳat itmiyen eṣḥāṣ lāyıḳıyle istiʿmāl idemiyeceği cihetle dāʾimā ḥüsn-i ḥālde tutmak ve bozılursa taʿmīr eylemek içün her makine başında erbābından bir kişiniñ bulunması lāzım gelür." [Although the machine may seem quite plain, in reality, it is a very intricate and sensitive thing, and since it cannot be appropriately used by inexperienced people, it is necessary to have a skilled person at each machine to keep it in good condition and to repair it if it breaks down.] BOA, İ.MVL 560/25164, 9 Cemāẕīyyü'l-evvel 1283/19 September 1866.

In this text, which is not known to what extent it reaches the agriculturalists and how much it is comprehended, is only a sort of information imported from Europe mentioned? Is there not an amalgamation of local procedures and knowledge from Europe? Recently, the concept of *hybrid knowledge* has come to the fore in the trend of reductionist historiography that accuses even the ontological analysis of the situation with Eurocentrism. It would not be realistic to claim that hybrid knowledge dominated a commodity in Ottoman agriculture. It would be the most plausible approach for some agricultural products to be dominated by hybrid knowledge, for some merely local knowledge, and for others modern agricultural (agronomic) knowledge that has been finalised in Europe and the United States. It is onerous and problematic to discuss hybrid knowledge when deliberating about cotton cultivation, even considering local conditions. In all kinds of narratives and in different primary sources, it is often emphasised that local methods are faulty. There is an almost consensus on this matter. Although local farmers had some experience, these experiences did not make them more successful than a chemist at talking to nature. Today, it is not a matter of discussion that modern agricultural methods and technologies, which progress parallel with institutionalised science (along with technology), are much more productive, thriving, and promising in interacting with nature. Furthermore, writing a success story in cotton agriculture with local experts and hybrid knowledge is also impractical since local cotton seeds are not melded and meliorated with scientific methods and are of poorer quality. For example, Kadri also states in his pamphlet that the methods he considers “old-school” have already been abandoned in the United States. There is no tendency in Kadri’s tone to denigrate the knowledge of the local people or to characterise the new ways as “saviours” that

allowed the empire to "progress."[361] It is, more precisely, an ontological reality that Kadri draws attention to, which proves why cotton could not be grown well and offers solutions. Therefore, it would be a more accurate approach to consider scientific knowledge as an instrument used to maximise profits, especially for cotton. It is hoped that the new methods will eliminate the "*fatal engourdissement* (numbness)" that has infiltrated the soil.[362] An ideal distance can be placed between speculation and reality only if state standardisation and simplification are considered by-products of this economic goal.

Besides the newspaper articles on Turkey's resources, books were also published in this period. The most famous of them was James Lewis Farley's book *The Resources of Turkey* (1862), frequently advertised in various publications such as *The Money Market Review*. The London Ambassador of the Ottoman Empire, Musurus Bey, thanked him in a private letter and said that this book would attract British investors to the country to invest in fields such as railways.[363] It is not known whether Farley intended to benefit from the Ottoman Empire in writing such a book, but it can be asserted that it paid off. Farley's request to enter the Ottoman service, first in *The Levant Herald* (1856–1914, with cuts and name change),[364] which was also funded by the government, was accepted, and then he worked at the Ottoman consulate in Bristol.[365] While working in Bristol, he wrote another book called

[361] Burçak, "Modernization, Science and Engineering in the Early Nineteenth Century Ottoman Empire," 69.
[362] "L'héritage du roi coton II," *Journal de Constantinople*, no. 4568, 5 January 1865, 1. This is not just a duality produced in mind. The fact that something is new is an ontological reality, just as something is solid. According to Robert William Cumberbatch, the then British consul in Izmir, there is no obstacle to cotton production in this country, except for those arising from the primitive agricultural system. "Le coton en Turquie," *Journal de Constantinople*, no. 4511, 31 October 1864, 1. What should be criticised in this discourse is not that there is a type of *restrictive* scientism (a *narrow* and *strong* position) but that the lack of capital is lost in the narrative from time to time. Leaving this criticism aside and criticising restrictive scientism is a superfluous addition that hides the problem rather than revealing and explaining the driving force behind the narrative.
[363] Musurus to Farley, "The Resources of Turkey," *The Money Market Review* (5 July 1862): 8.
[364] BOA, HR.SFR.3 154/11, 14 May 1869.
[365] BOA, HR.SFR.3 160/53, 31 March 1870.

Modern Turkey (1872) and sent a copy to Musurus Pasha—Musurus was given the title of *pasha* after Sultan Abdülaziz visited Britain in 1867.[366]

The scientific knowledge spread in the vast geography of the empire through publications and actors is also reflected in applied studies. As a result of scientific observations in Cyprus as of 1865, it was thought that drilling water (artesian) wells for cotton farming would be successful. Thereupon, it was decided to carry it out together with the necessary engineers.[367] To be sure, it was possible to use traditional methods in drilling water wells, but it was a viable approach to prefer new techniques instead of classical well drilling for a crop such as cotton that spreads over large areas and requires special attention and treatment. The aim was primarily to augment productivity of cotton farming.

3.3 The role of technological input

The lack of machinery was also noted in the foreign press.[368] According to Frederick LaFontaine, a cotton cultivator and businessman from Izmir, the advantage of new technologies in cotton farming would be better grasped when new machines replaced

[366] BOA, HR.SFR.3 180/77, 17 April 1872.

[367] "Il résulte des observations scientifiques qu'il est très probable et presque même certain qu'on réussirait à forer des puits artésiens, et, quand on considère que l'eau ici a une valeur égale à celle de la terre, on peut facilement comprendre combien une entreprise de ce genre serait rémunératoire." [It follows from scientific observations that it is very probable and almost certain that we would succeed in drilling artesian wells, and, when we consider that the water here has a value equal to that of the earth, we can easily understand how an enterprise of this kind would be remunerative.] "La culture du coton en Turquie," *Journal de Constantinople*, no. 4706, 17 June 1865, 1.

[368] "The want of good seed and a better class of machinery for cleaning the crop appears to be much felt by cultivators." *The Morning Post*, 24 September 1862, 6; "The Supply of Cotton from Asia Minor [from *The Cotton Supply Reporter*]," *The Glasgow Herald*, 21 August 1862, 2; and Frangakis-Syrett, "İzmir'de Pamuk ve Kumaş Ticareti," 111. Another point that reveals the gravity of the situation is the primitiveness and scarcity of the machines to be used in cotton production and sanitation in cities far from Istanbul and western Anatolia. For example, there were only two cotton gins in Basra. Johnston [Vice-Consul], "Inclosure in No. 2. Précis of Reports upon the Cultivation of Cotton. Baghdad, Moossul, Bussorah, Jerusalem, Jaffa, and Caiffa and Acre. Bussorah, Turkish Arabia. His Highness Namick Pasha, Governor-General," in *Turkey. Circular to Her Majesty's Consuls in the Ottoman Dominions Regarding Cotton Cultivation; together with a Summary of Their Replies* (1865), no. 3498, at 57:7.

old equipment. LaFontaine, as an entrepreneurial actor, believes this would result in ten times the yield. To illustrate, he cites a farmer he knows well. This farmer attempted to sell his farm for 80,000 piastres for a while but could not find a buyer for his desired price. After the introduction of new agricultural techniques and machinery, he succeeded in making a net profit of 70,000 piastres in a year from cotton alone on his farm. Moreover, he hopes to triple that amount next year.[369] Although there was an effort to foster an expectation to raise cotton production in every newspaper column of the period, LaFontaine's approach did not seem problematic. Because the lack of technology brought with it a waste of time to separate the fibre and seed of the growing crop. The understanding that time is money was dominant in commercialised agriculture. In addition to the lack of technology, the shortage of engineers is also noted in the British consul reports. As the local Ottoman administrators maintained, they did not have engineers who could guide them correctly on these issues. In the consul reports, engineers from Britain to conduct investigations and prepare reports on the Ottoman geography are requested.[370] Judging by the foreign experts that the Ottomans needed in this period, it would be possible to argue that the state and different layers of society did not enter the age of full specialisation in a narrow technical field and that the early modern era of the so-called *hezār-fenn*s (close to polymaths) somewhat endured. The increasingly efficient mobility of sensory actors also marked the transition to the age of experts.

[369] "Turkey. The Cultivation of Cotton," *The North and South Shields Gazette*, 9 January 1862, 6.
[370] Lang [Acting Consul], "Inclosure in No. 2. Précis of Reports upon the Cultivation of Cotton. Syria and the Island of Cyprus. Island of Cyprus," in *Turkey. Circular to Her Majesty's Consuls in the Ottoman Dominions Regarding Cotton Cultivation; together with a Summary of Their Replies* (1865), no. 3498, at 57:22–24. The failures in the Epirus region are also attributed to these and similar problems. Stuart [Consul], "Inclosure in No. 2. Précis of Reports upon the Cultivation of Cotton. Turkey in Europe. Epirus," in *Turkey. Circular to Her Majesty's Consuls in the Ottoman Dominions Regarding Cotton Cultivation; together with a Summary of Their Replies* (1865), no. 3498, at 57:30.

Being aware of the seriousness of this situation, Safvet Pasha, in the letter he wrote to Musurus Bey, after mentioning the steps taken for the promotion of cotton cultivation in Turkey, asked Musurus Bey for new information on cotton agriculture and requested that the socio-economic situation of the Muslim people be taken into account in the selection of suitable model/sample tools. In addition, if there were any treatises on cotton agriculture that might be useful to be translated into Turkish through the agency of Musurus Bey, it was ordered to obtain information about them and send the copies to Safvet Pasha as soon as possible.[371] At this point, it is sometimes seen that a sensory actor can also be an entrepreneurial actor. In other words, the identities observed in cotton production were not always fixed. Fluid identities were also available. This status also applied to cotton producers who worked within the CSA or who had a close relationship with the CSA. A chaotic identity situation is also articulated with the complex production dynamics in different regions because performing the roles of both identities brought with it new challenges. Once in a while, actors failed to fulfil the required actions of both identities properly.

It was reported that some tools for selecting and sorting seeds for the province of Aydın would be sent and taught to the public to use them, the cost of these would be paid by the treasury, and the amount of the tithe to be collected would be determined according to the per acre of the planted area.[372] Some of the British consul reports allude to the success of such attempts, while others note that they are

[371] He also mentions the substance of the practical dimension of the new knowledge to be obtained: "It will not escape your observation that these treatises, to attain the object which the [g]overnment would have in view in circulating them in rural districts, must be precise, and essentially practical." BOA, HR.SFR.3 69/8, 8 October 1862.
[372] BOA, A.}MKT.MVL 144/58, 16 Şevvāl 1278/16 April 1862. Collecting the tithe according to the per acre of the planted area was also applied in Izmir at that time. BOA, MVL 656/67, 6 Rebīʿü'l-āḫir 1280/20 September 1863.

unsuccessful. Particularly in the eastern parts of the country, mainly the Fertile Crescent, most of the machines brought from Europe and America were the efforts of foreign entrepreneurs. The attitude of local governments here is expressed as "dog-in-the-manger."[373] This statement from the Cyprus consular report is an example of the challenges that transmitter actors pose to entrepreneurial actors.

There were many non-Muslims from the Tarsus sanjak who were allowed to cultivate cotton by machine, such as R. Papasian (Papasyan). In another example, a Greek engineer named Trypani came to the fore in Cilicia. This Greek engineer, who started the cotton cleaning business with a small cotton gin, later became known for a company called the Trypani Brothers.[374] There were also those who were British subjects and imported cotton carding machines.[375] Machines imported from Britain were shipped to the necessary places, albeit in limited numbers. For example, (cotton) gins were built in Adana, Tarsus, and Mersin to clean cotton more effectively.[376] Two gins imported from London were accordingly shipped to Sivas.[377] Various conveniences have been provided in the importation and customs clearance of the machines.[378] In addition, machinery was distributed to encourage cotton

[373] ". . . [CSA] offered me, three years since, all necessary implements gratis; the Syrian Relief Society would, I have reason to believe from their letters, have provided me with funds, provided I could have land on good title, and my answer was, against the law; Europeans [cannot] hold land." Grierson [Vice-Consul], "Inclosure in No. 2. Précis of Reports upon the Cultivation of Cotton. Syria and the Island of Cyprus. Latakia," in *Turkey. Circular to Her Majesty's Consuls in the Ottoman Dominions Regarding Cotton Cultivation; together with a Summary of Their Replies* (1865), no. 3498, at 57:26.
[374] BOA, A.}MKT.NZD 393/91, 19 Receb 1278/20 January 1862; and Fraser, *The Short Cut to India* (1909), 77. Another local entrepreneurial actor, named Mıgırdıç Kayseriliyan, one of the Armenian subjects, had a six-horsepower steam engine built in Geyikli of the Biga sanjak to clean cotton. BOA, İ.MVL 524/23530, 28 Receb 1281/27 December 1864.
[375] BOA, HR.MKT 379/52, 20 Ẕi'l-ḳaʿde 1277/30 May 1861; and BOA, HR.MKT 415/50, 3 Cemāẕīyyü'l-evvel 1279/27 October 1862.
[376] BOA, A.}MKT.MHM 299/36, 26 Ẕi'l-ḳaʿde 1280/3 May 1864. The import of a cotton gin, which was expected to be made in Edirne in the same year, was reflected in the foreign press. "Cotton from Turkey," *The North Devon Journal*, 13 October 1864, 7.
[377] BOA, C.İKTS 2/97, 21 Ṣafer 1282/16 July 1865.
[378] BOA, HR.MKT 411/46, 28 Rebīʿü'l-evvel 1279/23 September 1862; and BOA, MVL 646/84, 8 Şevvāl 1279/29 March 1863.

farming. It is noteworthy that Münib Bey was awarded a cotton gin as well as a gold medal for his success in growing cotton in Gallipoli.[379]

The interest shown by the Ottoman state in the exhibitions where agricultural products and machinery were displayed should also be mentioned because thanks to these exhibitions, producers from the Ottoman lands had the chance to demonstrate their products to investors from all over the world and were also given the opportunity to follow the latest developments in agriculture. These exhibitions were vital to the advancement of cotton farming. The first international exhibition worth mentioning was the one held in London in 1851. The items to be sent to this exhibition were brought from the provinces, collected in Istanbul, and exhibited for a week. Among the objects on display were products such as cotton clothes.[380] The exhibition in Istanbul, which Sultan Abdülmecid visited on 22 March, was allowed to be visited by foreign state ambassadors on 23 March and by tradespeople as well as by merchants on 24 March.[381] Many high-ranking Ottoman bureaucrats participated in the London Exhibition opened on 1 May 1851. The most colourful account of this exhibition and the London that hosts the exhibition belongs to a *Cerīde-i Ḥavādiṯ* reporter, whom himself visited the Great Exhibition, but it is possible to find the author's name neither in the newspaper issues nor in the published travel book. Given that many texts in the *Cerīde-i Ḥavādiṯ* are published anonymously, the identity and name of the author are not of vital importance. Although the determination of the writer might enable different readings and insights

[379] BOA, A.}MKT.MHM 378/25, 25 Ẕi'l-ḳaʿde 1283/31 March 1867.
[380] These objects can be considered "entrepreneurial actors" because of the purpose they contain and the role they play. Correspondingly, all exhibition objects in the thesis are handled in this way.
[381] Önsoy, *Tanzimat Dönemi Osmanlı Sanayii ve Sanayileşme Politikası*, 59; and Akçura, *Türkiye Sergicilik ve Fuarcılık Tarihi*, 20. The cotton samples sent to the exhibition in 1851 attracted the attention of the foreign press, and these samples were found promising for the future of Ottoman cotton agriculture. Hunt, "The Culture of Cotton in Turkey," *Hunt's Merchants' Magazine* (February 1852): 156–59.

into the text, it still gives a considerable amount of information about the reactions of an average Ottoman literate to the conditions of the period. Since detailed descriptions of the exhibition were regularly published in the *Cerīde-i Ḥavādiṯ*, the author focused on his impressions of London.

The most significant part of these impressions that can be discussed within the scope of the thesis is his observations on British agriculture. As an Istanbulite, the first difference that caught his attention in agriculture was that farmers in Britain approached agriculture as a "scientific" activity.[382] Another fundamental difference that drew the author's attention was mechanisation, which also made a difference in agricultural techniques: "Zirāʿat maḥallerine defʿaātle gidüb seyr iderdim ki vapor [vapour] ile dahi zerʿ ü ḥarṯ idiyorlar . . . [;] çiftleri dahi çelikden olarak pek aʿlādır." [I used to go to the agricultural areas over and over and watch that they are also farming with vapour . . . [;] their pairs are also very good in steel.][383] This observation is fundamental in apprehending the significance of mechanisation in every agricultural activity, including cotton. Similar attention to agricultural implements by the author would also be noticed in the 1863 *Sergi-i ʿUmūmī-i ʿOṯmānī* (Ottoman General Exhibition). For example, Münif Pasha would introduce the machines in the exhibition in 1863 one by one in the *Mecmūʿa-i Fünūn*, years

[382] ". . . ve Londra'da zirāʿat māddesi gūyā kesb ü kār içün olmıyub ancak fünūn içün gibi ẓann olunur ki ḥattā gübreyi gemiyle dört aylık maḥallden yaʿnī Peru ṭarafından kuş gübreleri getürüb bayağı gübreden ziyāde istiʿmāl itmekle ḳanṭārı otuz iki ġurūşa gelür." [. . . and in London, agriculture gives the impression that it is done for *fünūn*, not for business and professional purposes. They even bring bird manure (fertiliser) from Peru, four months' distance by ship, use it more than common/ordinary manure, and sell it for thirty-two piastres a *ḳanṭār* (approx. 56.5 kilogrammes).] *Seyāḥat-nāme-i Londra* (1269 [1852/1853]), 76. It is worth remembering that this is a London-based impression.

[383] *Seyāḥat-nāme-i Londra* (1269 [1852/1853]), 76. In addition, he underlines that a tax such as a tithe is not collected from the farmer. However, all these did not mean that the British farmer did not have any problems. ". . . ve ẕikr olunan beş-yüz arşun yeriñ derinliği ve düzlüğü ol-ḳadar kemāldedir ki hiç inḥirāf görememişimdir ve birikdirdikleri ve ḳaṭʿ itdikleri mezrūʿātı dört kūşe gāyetle ẓarīf ve yağmur geçmez derecede dizerler." [. . . and the depth and flatness of the five-hundred (Turkish) yards mentioned above are so perfect that I have not seen any deviation (or error), and farmers arrange the crops they have accumulated and traversed in an exquisite and rainproof manner.] *Seyāḥat-nāme-i Londra* (1269 [1852/1853]), 77.

after the narrative of the exhibition in 1851. Among them would be a machine that clamps the cotton bales.[384]

The Ottoman Empire, who appeared as a regular participant in international exhibitions, also wanted to take its place as a host in this exhibition frenzy. After the *Sergi-i ʿUmūmī-i ʿOs̲mānī Niẓām-nāmesi* (Ottoman General Exhibition Regulation), prepared on 22 December 1862, subcommittees were established in various cities of the empire under the chairmanship of the governors and district governors in order to determine the goods to be included in the exhibition.[385] The goods and commodities selected by these committees were sent to Istanbul to be exhibited. The goods to be displayed were exempted from all kinds of taxes and customs. At the end of the surveys, over ten thousand items sent from all over the Ottoman Empire were found worthy of display. The Minister of Finance of the time Mustafa Fâzıl Pasha, the *Ḫāriciyye Teşrīfātçısı* (protocol official or usher on behalf of the Ministry of Foreign Affairs) Kâmil Bey, Fu'ad Pasha's son and a member of the Meclis-i Vālā Nâzım Bey, the Trade Undersecretary Server Efendi, and Agathon Efendi, who also took an active role in the Zirāʿat Taʿlīm-ḫānesi, were at the head of the committee established in Istanbul to carry out the exhibition works. At the opening, there would be Sultan Abdülaziz, Yusuf Kâmil Pasha, Âlî Pasha, Fu'ad Pasha, and the Egyptian governor (not yet the khedive) İsmâil Pasha.[386] To determine the quality, variety, and prices of the goods produced in various regions of the empire, to identify the problems encountered in production and to attract the attention of the relevant

[384] Turgay, *Türk Ziraat Tarihine Bir Bakış*, 148. The *Mecmūʿa-i Fünūn* is also known as the publication of the ʿOs̲mānlı Cemʿiyyet-i ʿİlmiyyesi, which was also established in these years.
[385] This regulation with 61 articles was published in the *Cerīde-i Ḥavādiṣ* as well. *Cerīde-i Ḥavādiṣ*, no. 1128, 5 Ṣaʿbān 1279/26 January 1863, 1–2. The facsimiles of the regulation were published by the newspapers of that period, as well as in a circular sent to all provinces and districts, the importance of the exhibition was explained, and civil servants were asked to encourage farmers, artisans, and merchants to participate in the exhibition, and it was stated that all kinds of convenience would be given to the participants. Önsoy, *Tanzimat Dönemi Osmanlı Sanayii ve Sanayileşme Politikası*, 72.
[386] Akçura, *Türkiye Sergicilik ve Fuarcılık Tarihi*, 26–27.

people, to enable businessmen and producers to come together and meet, and to inform the producer about the latest agricultural techniques and tools, as a hub where agriculture would be discussed and new collaborations would be established, the Sergi-i ʿUmūmī-i ʿOs̱mānī opened its doors to guests on 28 February 1863 (see the Figure 3 below for the exhibition pavilion built at the *Atmeydanı* or the Hippodrome of Constantinople).[387]

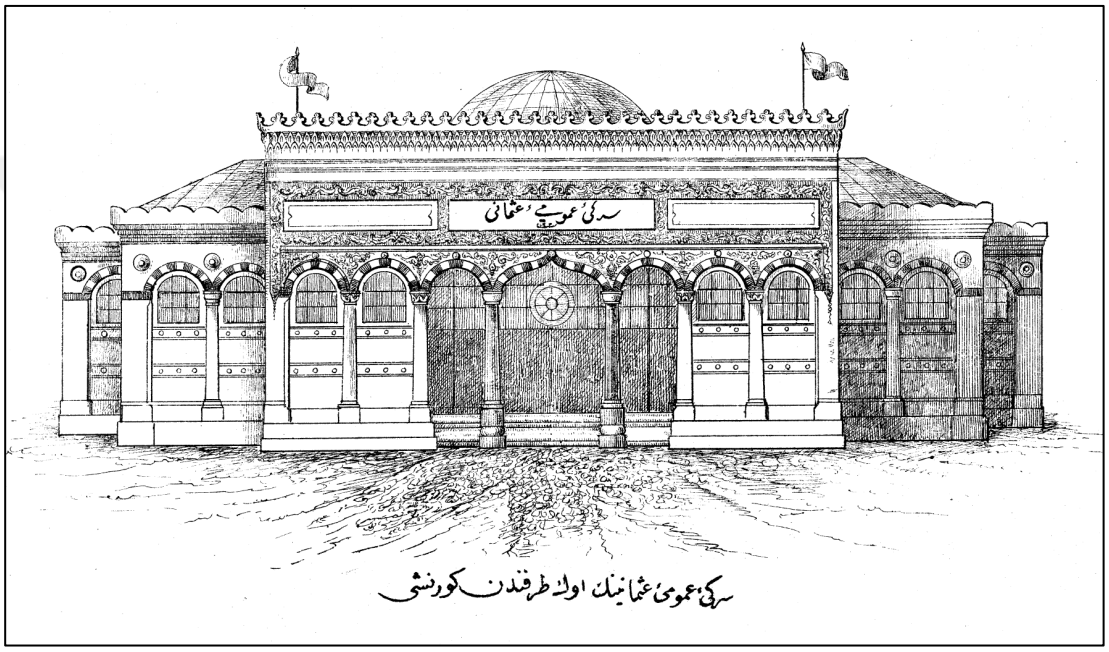

Figure 3. The front-side view of the 1863 Ottoman Exhibition[388]

An exhibition pavilion covering an area of 3,500 square metres was built in the Hippodrome of Constantinople to host the products, machinery, tools, and equipment that would participate in the exhibition. A commemorative decoration with a depiction of the pavilion was minted and ornamented with three words:

[387] Önsoy, "Osmanlı İmparatorluğu'nun Katıldığı İlk Uluslararası Sergiler ve Sergi-i Umumi-i Osmani," 234. Among those interested in the exhibition, French and British business and capital circles drew attention. Even though the French did not stand out as much as the British actors in the sources of the period, it should not be forgotten that entrepreneurs from other states were also a part of the story. For example, a group of 10-15 people consisting of Parisian manufacturers and businessmen came to Istanbul to visit the exhibition, take orders, and see the goods produced or manufactured in the Ottoman Empire.

[388] "Sergi-i ʿUmūmī-i ʿOsmānī'niñ Öñ Ṭarafından Görünüşü [The Front-Side View of the 1863 Ottoman Exhibition]," *Mirʾāt* (Ramażān 1279/February-March 1863): 19.

"*Ḥirfet*, *Ṣanʿat*, *Ticāret* (Crafts, Industry, Trade)."[389] A march was also composed for the exhibition.[390] Although in the beginning, only domestic products were considered for the exhibition, it was decided that it would be advantageous to exhibit the newly invented machinery, tools, and equipment that would be sent from Europe later on.[391] Invitations were sent to entrepreneurs of foreign countries to dispatch agricultural and industrial machinery and equipment for practical use to the exhibition. It was guaranteed that these products would benefit from customs duty exemption.[392] These promises were kept, and the Order of the Medjidie (*Mecīdiyye*) were conferred on the directors of four British factories that supplied the mentioned tools and equipment for the exhibition. These companies are Richard Garrett & Sons of Suffolk; Wallis & Steevens of Hampshire; Picksley, Sims & Co. of Lancashire; and Ransomes, Sims & Jefferies of Ipswich (see Appendix D for a few varieties of ploughs from the exhibition).[393] The tools brought to the exhibition were also purchased by the Ottoman government.[394] Before the purchases, these tools were tried on at the *Serdār-ı Ekrem* (field marshal or commander-in-chief) Ömer Pasha's private estate in the vicinity of Küçükçekmece, in front of the Grand Vizier Fu'ad Pasha and other

[389] Eldem states that the only document found regarding the awarding of these medals bears the date of 6 Şevvāl 1282 (22 February 1866), and that these awards were given to their owners only three years after the exhibition. Eldem, *Pride and Privilege*, 241.
[390] The composer of the march is Callisto Guatelli, the head of the *Mızıka-i Hümāyūn* (Imperial Band) during the reign of Sultan Abdülaziz. This march, whose notes have survived to the present day, was also performed by the London Academy of Ottoman Court Music ensemble directed by Emre Aracı. Akçura, *Türkiye Sergicilik ve Fuarcılık Tarihi*, 30.
[391] Önsoy, "Osmanlı İmparatorluğu'nun Katıldığı İlk Uluslararası Sergiler ve Sergi-i Umumi-i Osmani," 208.
[392] "De Omnibus Rebus," *Public Opinion* (20 December 1862): 1104.
[393] BOA, HR.SFR.3 84/20, 23 December 1863. All four companies wrote letters to Musurus Bey expressing their gratitude and declaring that they were honoured. One of the reasons why a medal was sent to these names may be that the governors of Latakia, Drama, Kavala, and Adana were awarded medals at the International Exhibition of 1862 in London. Farley, *Turkey* (1866), 54–55; and Farley, *Modern Turkey* (1872), 238–49. A total of 83 medals and 44 mentions were won. Akçura, *Türkiye Sergicilik ve Fuarcılık Tarihi*, 22.
[394] BOA, İ.DH 515/35038, 13 Rebīʿü'l-āḫir 1280/27 September 1863. The tools and equipment brought to the exhibition were not enough. Hence, the same tools were purchased again a year later. BOA, A.}MKT.MHM 313/54, 29 Rebīʿü'l-āḫir 1281/1 October 1864.

state dignitaries. As a result of these trials, machines and tools were found useful, and it was decided to purchase them for the development of the country's agriculture.[395] Thus, although mechanised cotton farming persisted as an unaffordable dream for small farms, some medium-sized and large estates had a chance to get the new technology they needed.

The actors working for the exhibition were not only the actors of the state. Hyde Clarke, the Vice-President of the Imperial Cotton Commission in Izmir and one of the senior officials of the CSA, also attempted to increase the number and variety of machines that would participate in the exhibition. In a letter he wrote to the Izmir consul of the United States, Julius Bing, Clarke asked the United States to send samples of cotton gins and other agricultural instruments to the exhibition.[396] According to Hyde Clarke, the country's agricultural methods and associated equipment were so primitive and useless. In addition to this, he told Julius Bing that European agricultural tools were not very apt for the Ottoman Empire and that he thought the US agrarian implements would be more fruitful here due to their proven success in the West Indies and South America (see Figure 4 below for one of these instruments).[397] Thanks to the exhibition in 1863, the urgent need for mechanisation had become much more evident.

[395] *Cerīde-i Ḥavādiṯ*, no. 1151, 10 Ṣafer 1280/27 July 1863, 1.
[396] US Congress, House, *Executive Documents: Printed by Order of the House of Representatives During the Third Session of the Thirty-Seventh Congress. 1862–'63. In Twelve Volumes* (1863), 574.
[397] US Congress, House, *Letter of the Secretary of State, Transmitting a Report on the Commercial Relations of the United States with Foreign Countries, for the Year Ended September 30, 1863* (1865), 499. Some of these products were also exhibited in local buildings in Izmir. In another letter, Hyde Clarke stated that the products displayed at the station of the Smyrna (Izmir)-Cassaba (Kasaba) Railway were visited and admired by European agriculturalists and local people. However, some minor adaptations seemed to be required because the iron ploughs sent were cumbersome for the people of Izmir. After all, there were no strong horses to pull them. US Congress, House, *Letter of the Secretary of State, Transmitting a Report on the Commercial Relations of the United States with Foreign Countries, for the Year Ended September 30, 1863* (1865), 499.

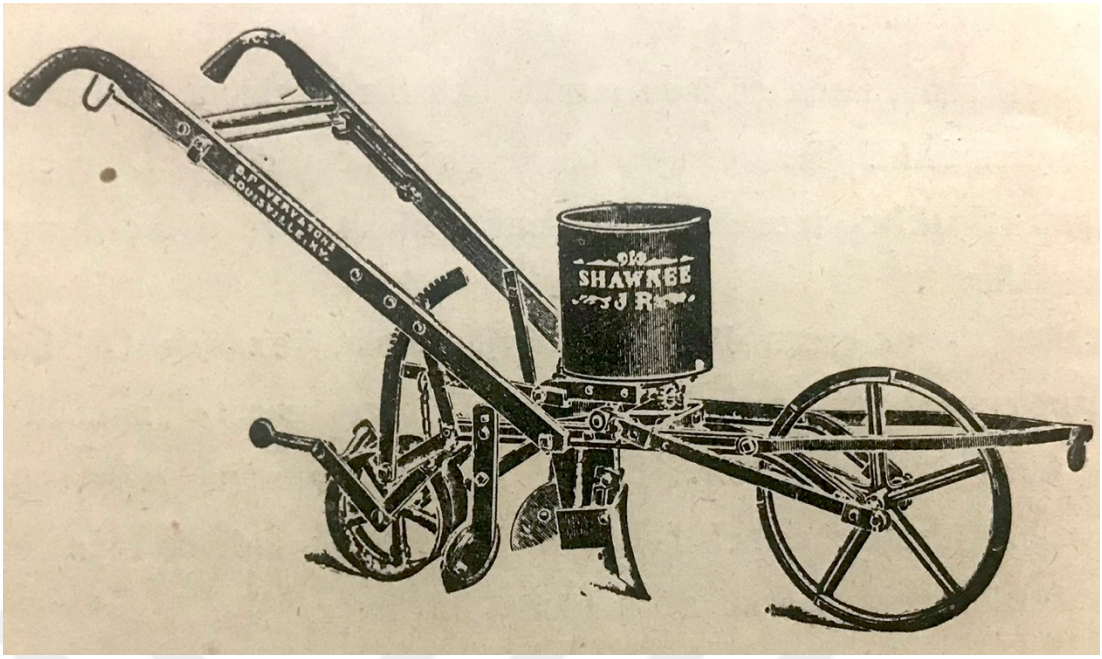

Figure 4. A tool used in America for hoeing and sprinkling cotton seeds[398]

Cotton-related products were exhibited in the seventh pavilion of the exhibition, which consisted of 13 pavilions. As Rifat Önsoy points out, 92 cotton samples were sent to the exhibition from almost all parts of the empire (see Table 3 below for the amount of cotton samples sent to the 1863 Ottoman Public Exhibition by region). The most admired cotton samples in the exhibition came from Egypt and then from Izmir. A man named Clarke grew raw cotton from New Orleans seed in Söke (in the province of Aydın) and sent a sample that was satisfactory in all respects, both in colour and in average fibre length. *The Guardian* highlights that Clarke was the only person to write a detailed description of the sample he sent, which was also one of the potential indicators that the exhibition was not managed professionally enough.[399]

[398] Âbidin, *Pamuk: İstihsalden İstihlâke Kadar*, 130.
[399] "Cotton and Cotton Goods in the Turkish Exhibition [from *The Levant Herald*]," *The Guardian*, 13 May 1863, 3.

Table 3. Cotton Samples Sent to the 1863 Ottoman General Exhibition[400]

Location	Number	Location	Number	Location	Number
Izmir	24	Acre	1	Manisa	1
Balıkhisar	10	Aleppo	1	Maraş	1
Amasya	7	Beirut	1	Mardin	1
Sérres	6	Çanakkale	1	Rhodes	1
Egypt	4	Damascus	1	Sivas	1
Filibe	4	Diyarbakır	1	Tekirdağ	1
İçel	4	Edirne	1	Thessaloníki	1
Adana	3	Izmit	1	Tırhala	1
Drama	3	Jerusalem	1	Tripoli	1
Latakia	2	Karasi	1	Yassıada[401]	1
Mosul	2	Konya	1	Kartalimen[402]	1

It was stated that Aydın cotton, like other cotton types grown in Turkey, had excellent colour and strength, despite the shortness of its staple. Therefore, it was believed that the region would come to be a critical supply and delivery point with the utilisation of American and Egyptian seeds. It was claimed that the cotton samples of Sérres, Thessaloníki, Drama, and Plovdiv dispatched from the Balkans also displayed promise. Nonetheless, in the end, the number of products sent was found insufficient by *The Guardian*.[403] Moreover, while the samples sent to the International Exhibition of 1862 in London were examined by the CSA and reports were written on them, it was evident that the Ottoman government did not write reports on the cotton samples at the exhibition in Istanbul and no scientific studies

[400] Önsoy, *Tanzimat Dönemi Osmanlı Sanayii ve Sanayileşme Politikası*, 76.
[401] Ibid. From Sir Henry Bulwer's farm in Yassıada (Pláti).
[402] Ibid. From Kartalimen (today's Kartal, a district of Istanbul).
[403] Ibid.

were conducted in cooperation with the CSA.[404] A comparative study between the exhibitions can reveal how successful the Ottoman end of the exhibition was.

While it was said that the number of visitors to the exhibition reached 3,000 in the first two or three days,[405] the possibility that the fair could lead to the advancement of agriculture was voiced in the British press.[406] Over ten thousand items sent from various parts of the empire were displayed in the exhibition.[407] Local exhibitions were also held in some regions, such as Izmir. Prizes were distributed in these exhibitions as well.[408] After the exhibition in Istanbul, the CSA allegedly proposed to the Sultan to establish an agricultural museum and the Imperial Agricultural Society, but these two institutions did not see the light of day.[409] Since the tools and machines on display were exhibited for the first time in the Ottoman Empire, great attention was drawn and even an article published in the *Taṣvīr-i Efkār* commented, "Avrupa emtiʿasınıñ revācı Memālik-i ʿOs̲māniyye maʿmūlātını ʿādetā *kūşe-i nisyānda* bırakmış." [The value/reputation of European commodities almost left the Ottoman state in the *corner of forgetting*.] Still, it is difficult to observe the positive effect of these new technologies on Ottoman agriculture.[410] The rise in raw cotton production was, of course, related to technological input, but it should not be forgotten that the most significant hindrance to mechanisation in agriculture was that the prices of these machines and tools far exceeded the purchasing power of the

[404] Wanklyn, *Report on the Samples of Cotton in the International Exhibition* (10 June 1862), 1.
[405] "Great Exhibition in Turkey," *The Bristol Mercury and Daily Post, Western Countries and South Wales Advertiser*, 21 May 1863, 6. It was estimated that the exhibition was visited by 100,000-150,000 people during its operating time. The revenue was around 450,000 piastres, which could only cover one-fifth of all expenses. Sultan Abdülaziz personally paid the difference. Önsoy, "Osmanlı İmparatorluğu'nun Katıldığı İlk Uluslararası Sergiler ve Sergi-i Umumi-i Osmani," 235.
[406] "Morning Post," *Public Opinion* (27 December 1862): 1118.
[407] Önsoy, "Osmanlı İmparatorluğu'nun Katıldığı İlk Uluslararası Sergiler ve Sergi-i Umumi-i Osmani," 210.
[408] "Cotton in Asia Minor," *The Times*, 16 October 1862, 17.
[409] National Association for the Promotion of Social Science [Great Britain], *Transactions of the National Association for the Promotion of Social Science* (1864), xlviii.
[410] *Taṣvīr-i Efkār*, no. 79, 8 Şevvāl 1279/29 March 1863, 2 (emphasis added).

small and medium-sized farm owners. Even threshing and chopping machines would hardly find a place in the dreams of an average Ottoman farmer. For an Ottoman farmer to buy a tractor or a threshing machine, he had to work all his life and be able to save what he earned.[411] Therefore, the devices used in many regions had remained relatively primitive. For example, in the reports of the British consul in Baghdad as of 1865, it was written that the machinery used was extremely primitive, while a small number of non-primitive machines were brought by European companies and were rented for the use of local people.[412] One of the main reasons on the surface of the widening chasm between the countries of Western Europe and the rest of the world from the nineteenth century onwards was the use of new technologies and the capital available to invest in these technologies. According to Pamuk, as investments in new technologies have become more widespread, productivity has increased in industry, transportation and, to a lesser extent, agriculture.[413] The difference mentioned above, or the gap that Western Europe has riveted, is the result of every state having a different era and a different *longest nineteenth century*. However, the idea of *progress* that needs to be captured has now become an indispensable part of the discussions of the Ottoman intellectual world. One of the best channels to follow these discussions is the publications on technological input. This presence also indicates that this whole subject has a discourse dimension that makes analysis possible—although it is beyond the scope of this thesis.

[411] Baskıcı, "Machine Prices and the Mechanization of Ottoman Agriculture," 74–75. Baskıcı enunciates that even the simplest type of plough was sold for 300 piastres in Edirne in 1908, which corresponds to the quarterly income of an average farmer.
[412] Kemball [Consul-General], "Inclosure in No. 2. Précis of Reports upon the Cultivation of Cotton. Baghdad, Moossul, Bussorah, Jerusalem, Jaffa, and Caiffa and Acre. Province of Baghdad. His Highness Namick Pasha, Governor-General," in *Turkey. Circular to Her Majesty's Consuls in the Ottoman Dominions Regarding Cotton Cultivation; together with a Summary of Their Replies* (1865), no. 3498, at 57:3–5.
[413] Pamuk, *Uneven Centuries*, 11.

One of the other prominent exhibitions was the Paris Exhibition in 1867, and the other was the Vienna Exhibition in 1873.[414] In the 1867 exhibition, the Ottoman Empire displayed examples of agriculture, industry, traditional handicrafts, and fine arts in 64 different categories, and cotton products were also included in this exhibition. Preparations for the Vienna Exhibition in 1873 were started, a year before, by a commission under the chairmanship of İbrâhim Edhem Pasha, who was the Minister of Public Works and Trade, and his son Osman Hamdi Bey was appointed as the exhibition commissioner. Osman Hamdi Bey was assigned to prepare the pavilion devoted to the Ottomans in the exhibition.[415] Victor Marie de Launay participated in both exhibitions, provided various assistance to government officials, and made publications about Turkey. He was rewarded with a medal two years later, albeit belatedly, for his articles in the *Journal de Constantinople* on the Sergi-i ʿUmūmī-i ʿOsmānī in 1863.[416]

It is no coincidence that the name of Sultan Abdülaziz is seen in two exhibitions at the same time. He is one of those who participate in the narrative not as a great man but as an actor in the dynamic structure of dissimilar actors, objects, and networks of relations (*cf.* pages 6 and 7). As known, Abdülaziz, who spent the first ten years of his reign with the reform policies of Âlî and Fu'ad Pashas, during

[414] Details about the exhibition are explained in detail in the pamphlet called *La Turquie à l'Exposition universelle de 1867* (Turkey at the Universal Exhibition of 1867), written by Salâheddin Bey, the exhibition commissioner of the Ottoman delegation in 1867. Salâheddin Bey [Commissaire impérial Ottoman près l'Exposition universelle], *La Turquie à l'Exposition universelle de 1867 : ouvrage publié par les soins et sous la direction de Exc. Salâheddin Bey* (1867).
[415] Akçura, *Türkiye Sergicilik ve Fuarcılık Tarihi*, 36. Cotton samples were liked: ". . . many provinces of the Ottoman Empire sent very good samples." Campbell, "A Survey of the Exhibits Connected with the Cotton Manufacture," in *Artisans' Reports upon the Vienna Exhibition* (1873), 58. However, the overall performance of the Ottomans was not appreciated: "Turkey has only a small show at Vienna, if that is all which is contributed in the main building of the [e]xhibition. The saddlery is similar in style to our English, but it is poor and ill-formed, and composed of bad material. We must not take this small show to represent the Ottoman Empire, when we have seen such excellent samples of workmanship and material at a similar [e]xhibition, so short a time back as in 1867." Thompson, "Leather, Harness, Saddlery, Whips, Port-manteaus, Purses, Pocket-books, &c. Turkey," in *Artisans' Reports upon the Vienna Exhibition* (1873), 23.
[416] BOA, A.}MKT.MHM 329/21, 15 Ẕi'l-ḳaʿde 1281/11 April 1865.

the rest of his reign, became a part of processes, such as the strengthening of the Ottoman navy, the realisation of the new provincial organisation, the publication of the *Meʿārif-i ʿUmūmiyye Niẓām-nāmesi* (General Education Regulation), and the establishment of the *Dīvān-ı Muḥāsebāt* (Court of Auditors), the *Şūrā-yı Devlet* (Council of State), and the *Dārü'l-fünūn*. His rule is one of the periods that almost every historian interested in the history of railways, trams, tunnels, sea routes, banking, theatres, and exhibitions in the Ottoman Empire needs to examine meticulously. What is less known about Abdülaziz, who was closely interested in his farm in Üsküdar when he was still a young prince, according to some, is the fact that he applied the latest agricultural methods in this farm and was allegedly the "most superior farmer of the empire."[417] Even though the news in the *Journal de Constantinople* does not validate Abdülaziz as the most outstanding farmer of the empire, they reveal the importance that the Sultan gave to agriculture and farming. Nevertheless, all these narratives should be approached with reasonable scepticism. Because the press always tends to make a mountain out of a molehill. Although there were developments in agriculture during the reign of Sultan Abdülaziz, none of them was revolutionary. Furthermore, although it is said that Abdülaziz displayed interest in many different things simultaneously, the narrative of how he developed in the areas he was interested in is incomplete. Therefore, it is difficult to be sure whether his interest in agriculture was a volatile situation. Regardless, it is still interesting that, in these years, when cotton production increased, there were narratives in the

[417] Ölçer, *Sultan Abdülaziz Han Devri Osmanlı Madenî Paraları*, 49; and "Voyage : de Sa Majesté Abd-ul Azis à Brousse [17 avril]," *Journal de Constantinople*, no. 1851, 24 April 1862, 2. Although some sources claim that before he became sultan, Abdülmecid had a farm in Beykoz, which was defined as near Üsküdar then and spent most of his time there, this claim needs more proof. Because Calhoun, who made this assertion, says that James Bolton Davis opened the Zirāʿat Taʿlīm-ḫānesi in Beykoz, and this information, like most of the information Calhoun gave, is entirely wrong. Calhoun, "Seeds of Destruction," 134.

press portraying Abdülaziz as an exemplary farmer and that the Sultan was also closely interested in science and technology.

Sultan Abdülaziz, who was followed by the *Journal de Constantinople* correspondents during his visit to Bursa, wandered around the natural and industrial goods of the province for a long time and was closely interested in the products and producers.[418] Two ploughs, one of which was the English and the other was of the French system, attracted the attention of the Sultan, who was emphasised that he frequently asked questions to the Grand Vizier.[419] The suggestion of the Sultan, who was not unfamiliar with the tools and equipment he was interested in due to his farmer identity, that the French system combined with the British one, could be applied to the country's agriculture more comfortably, was also included in the columns of the newspaper.[420] Sultan Abdülaziz's approach was of value because the machinists and engineers of American cities took local conditions into account as they had created the technology by 1850 that would allow US railroads to surpass British railroads in terms of track length. The technology developed in Britain could not be imported as it was not well suited to the United States due to the size of the distances and the rigidity of the landforms. In the United States, railway technology had to be developed locally with new techniques.[421] One of the people the Sultan met

[418] "Voyage : de Sa Majesté Abd-ul Azis à Brousse [17 avril]," *Journal de Constantinople*, no. 1851, 24 April 1862, 2.
[419] Ibid.
[420] Ibid. Another example that justified Sultan Abdülaziz about the necessity of local regulations is seen in Hyde Clarke's letter to Julius Bing. In this letter, Clarke states that the iron ploughs dispatched are not appropriate for the local farmer: "Iron ploughs have often been introduced here, and have failed, because they were too cumbrous for the people, or because they required strong horses to draw them." US Congress, House, *Letter of the Secretary of State, Transmitting a Report on the Commercial Relations of the United States with Foreign Countries, for the Year Ended September 30, 1863* (1865), 499.
[421] DeLanda, *A Thousand Years of Nonlinear History*, 82.

with during his visit was Torosoğlu, who also applied new agricultural methods in his large estate near Bursa.[422]

There have been those who tried to make larger narratives out of Sultan Abdülaziz's interest in agriculture. Ricky-Dale Calhoun sets down that Abdülaziz was the foremost proponent of cotton cultivation, based on the statement made by the Sultan during his visit to Izmir in April 1863 and his dismissal of Mehmed Reşid Pasha, the Governor of Izmir, on the grounds that he found the encouragement of cotton cultivation insufficient. Calhoun claims that Abdülaziz intervened decisively at these points where the local authorities were meagre.[423] It is accurate that Abdülaziz, like Abdülmecid, was closely interested in the country's agricultural policies. Hyde Clarke, one of the most influential names of the CSA in western Anatolia, shared in the news in *The Times* that the Grand Vizier Fu'ad Pasha told him that Sultan Abdülaziz had a personal interest in cotton planting.[424] Still, it is not possible to make a comparison with his elder brother Abdülmecid. Plenty of archival documents and press contents make it evident that both sultans were closely

[422] "Voyage : de Sa Majesté Abd-ul Azis à Brousse [17 avril]," *Journal de Constantinople*, no. 1851, 24 April 1862, 2.
[423] Calhoun, "Seeds of Destruction," 150. A similar narrative can be detected in Gardey as well, please see Gardey, *Voyage du sultan Abd-ul-Aziz de Stamboul au Caire* (1865), 24–25. Was Mehmed Reşid Pasha removed from his post because of Sultan Abdülaziz's specific interest in cotton farming? This question cannot be answered with absolute certainty and leaves the door open for speculation. For instance, an event that substantiates the difficulty of claiming this is that of the three nights Sultan Abdülaziz spent in Izmir, two were at Charlton Whittall's mansion in Bornova, used by Ege University Rectorate today, and the other at the estate of Dimonstanis Baltacı in Buca. Both names were engaged in the cotton trade. So, these two figures may have directed Sultan Abdülaziz by complaining about Mehmed Reşid Pasha's poor performance. Nonetheless, this visit raised the prestige of Charlton, who was approaching the end of his commercial life, and 40 well-known merchants from the city's notables presented him with a portrait made by George Edward Tuson—he had also painted the portrait commissioned by the Manchester municipality as a gift to Sultan Abdülaziz during his visit to Britain and spent a part of his life in the Ottoman lands. Among the signatories of the introductory letter were the following people who stood out while writing the cotton production story of Izmir: A. Edwards, Augustus Oakley Clarke, C. Hadkinson, C. P. Charlton, Frederick Charnaud, Frédéric Giraud, John B. Paterson, Peter R. Gout, Robert William Cumberbatch, Thomas Bowen Rees, and W. E. Browning. Giraud, *Family Records—A Record of the Origin and History of the Giraud and Whittall Families of Turkey*, 73; Demirbaş, *Rees Köşkü*, 89; and Eldem, "İktisat Tarihiyle Sanat Tarihinin Bir Kesişmesi," 70.
[424] "Cotton from Turkey," *The Times*, 26 November 1862, 7.

interested in agricultural policies. It was in the nature of the goods that Abdülaziz's steps on cotton cultivation were much more prominent than other commodities due to the American Civil War. As Calhoun also spelt out, during his speech in Izmir, where Sultan Abdülaziz stopped on his way back from his Egypt trip, he expressed his pleasure to see the consuls in his presence as well as the efforts made for the development of agriculture, trade, and industry in the country. The Sultan underlined that Izmir has made significant progress in the field of agriculture, that the cotton farming experiments in the city are admirable, and that he is delighted with the reverence shown to him by the people of Izmir.[425] It is noteworthy that agriculture, especially cotton farming, was emphasised in a speech based on ensuring the equality of the subjects and increasing the welfare of the people.

Not only was the progress made by Izmir appreciated, but it was emphasised that the Sultan and the Sublime Porte did not remain blind and deaf to the efforts of actors such as local and foreign merchants and consulates who played a role in this development. Âlî Pasha, who later printed this speech and sent it to Musurus Bey, the Ottoman Ambassador in London, set down in his note that the Sultan made maximum efforts to express his thoughts on the development and welfare of the country and the equality of the subjects and demanded that this speech be read by dignitaries and their opinions taken as well.[426] However, it is also necessary to refrain from making the role of Abdülaziz more prominent than other actors by constructing larger narratives from here alone. Otherwise, failures in cotton cultivation in the

[425] BOA, HR.SFR.3 77/5, 7 May 1863; *Tercümān-ı Aḥvāl*, no. 331, 17 Ẕi'l-ḳaʿde 1279/6 May 1863, 3–4; *Rūz-nāme-i Cerīde-i Ḥavādiṯ*, no. 620, 11 Ẕi'l-ḳaʿde 1279/29 April 1863, 1–2; *The Times*, 11 May 1863, 6; *Tercümān-ı Aḥvāl*, no. 329, 12 Ẕi'l-ḳaʿde 1279/1 May 1863, 2; Aksüt, *Sultan Aziz'in Mısır ve Avrupa Seyahati*, 47–49; and Gardey, *Voyage du sultan Abd-ul-Aziz de Stamboul au Caire* (1865), 237–39. In addition, Abdülaziz visited the cotton fields and factories in Egypt and sifted through them. Gardey, *Voyage du sultan Abd-ul-Aziz de Stamboul au Caire* (1865), 136–37.
[426] BOA, HR.SFR.3 77/5, 18 Ẕi'l-ḳaʿde 1279/7 May 1863.

Ottoman Empire would have to be reduced to one man's poor performance. Nevertheless, the situation resulted from a much more complex network of relations beyond the good or bad performance of one actor.

Ordinary men also find a place for themselves in this complex network of relations. For example, Frederick George Vedova (Wedova), a British subject who settled in Izmir in 1866, enhanced the already existing cotton gin.[427] The benefit of the machine was met with great interest, and it was also decided to send a sample to Istanbul within three months.[428] The certificate issued by the Provincial Cotton Commission emphasised that labour savings were achieved thanks to this novel design and that almost twice the efficiency of Platt's machines, considered the best so far, would also be attained. A fifteen-year concession was granted for the construction and sale of the machine.[429] Experiments and observations for granting the concession were made in Vedova's factory in Menemen. After this privilege was given, the drawings of the machine (see Appendix E) were sent to the Ministry of Public Works.[430] One year ago, in the *Journal de Constantinople*, the developments

[427] It can be traced in the records that Vedova applied for patents for different inventions in 1878: "Frederick George Vedova, of Smyrna, in the empire of Turkey, temporarily at the Office for Patents, 6, Lord Street, Liverpool, for an invention of '[i]mprovements in the manufacture and application of certain materials containing tannic acid, tannin, gallic acid, or the like, and the utilisation of certain raw products for the purpose.'" "Inventions. Applications for Letters Patent. Patents Sealed: 2947 and 2948. Frederick George Vedova," *The Commissioners of Patents' Journal* (21 January 1879): 145. No information about Vedova's education was recorded. However, it is noteworthy that not all inventor-engineers received a professional education given the conditions of the period. So much so that although Thomas Newcomen, the inventor of the first steam engine, was familiar with the basic principles of steam and vacuum as embodied in the scientific instruments of that period, he built this first engine mostly based on practical knowledge. Eli Whitney had also no professional engineering training. Technological inventions and industrial development based on new knowledge were in the hands of artisans and handicraftsmen with little scientific training but great mechanical genius. DeLanda, *A Thousand Years of Nonlinear History*, 94.

[428] BOA, İ.MVL 571/25664, 27 Ẕi'l-ḥicce 1283/2 May 1867.

[429] BOA, İ.MVL 571/25664, 27 Ẕi'l-ḥicce 1283/2 May 1867; and BOA, A.}MKT.NZD 382/13, 12 Muḥarrem 1284/16 May 1867.

[430] The relevant report approving the concession was signed on 1 October 1866, sticking to the spellings in the document, by Réchoud Moustapha, President of the Cotton Committee in Izmir, Vice-President Frederick LaFontaine, Secretary Mehemed Djorded, and other members. BOA, İ.MVL 571/25664, 27 Ẕi'l-ḥicce 1283/2 May 1867.

on the cotton gin were shared with the reader in a chronological narrative.[431] The detailed explanation of this article was such that it would direct many engineers or enthusiasts to these new inventions. Vedova's success was also heard in Britain. On behalf of John Davies and Son, one of the owners, John Lacey Davies, made a statement regarding Vedova's improvement in cotton gin:

> The [i]nvention relates to that description of "cotton gins" known as the "double-action Macarthy gin," and is designed to effect the self-feeding of the raw cotton to the roller and knife, and the improvements consist in securing the table of the "gin," upon which the cotton is first placed to the rocking shaft of the "gin," the table being placed at an inclination towards the grid bars, which bars are bent so as to form a concave or hollow surface, in which hollow a bar of wood or other suitable material is supported, and which extends the whole length of the ribs forming the grid, the supports for this bar are formed of bent rods that are attached to the stays of the rocking shaft; thus the table upon which the cotton is placed and also the bent ribs of the grid and the cross bar having a rising and falling motion imparted to them by means of their connections with the rocking shaft, and a second or lateral reciprocating motion is also given to the said parallel bar by means of a crank or eccentric, the combination of such motions supplies a regular and constant feed to the knife and roller of the gin, and thereby time and improves the cleaning power of the gin, greatly economises.[432]

Interest in inventions that accelerated the production rate was quite natural because, utilising Eli Whitney's cotton gin, the yield of raw cotton production could be increased fifty times overnight.[433] It is mentioned in the Ottoman records that, in 1869, an American named Noah Davis invented a new method to separate cotton from its seeds. In the relevant document, this method (an upgrade rather than an entirely new system) is referred to with some exaggeration as ". . . pamuk çekirdeğiniñ istiʿmāli-çün iḫtirāʿ-gerdesi olan uṣūle dāʾir . . . ." [regarding the invented method for processing cotton seed . . . .][434] It is underlined that the residue

[431] "Machines à égrener le coton," *Journal de Constantinople*, no. 4582, 21 January 1865, 4.
[432] Davies and Vedova, Cotton Gins. Davies' Improvements in Cotton Gins, UK Patent 2,753, issued 25 October 1866.
[433] Beckert, *Empire of Cotton*, 102.
[434] BOA, HR.TO 451/73, 26 April 1869.

left from the cotton seed is used and fertiliser is made from it in Davis's method.[435] Davis, like Vedova, obtained a fifteen-year privilege in the execution of the procedure.[436] Initiatives were encouraged by rewarding new inventions to extend production. Then, despite the generous reward mechanism, why are not there more examples of invention or machinery? Is this a recording problem, or is it a problem arising from the occasional neglect of technology's relationship with science?

Can an alternative answer be given to this question, apart from the shortcomings mentioned in almost every sub-heading? For example, in *Onto-Cartography*, Levi R. Bryant proposes a machine-oriented approach to the humanities and social sciences. In this approach, the "machine" is synonymous with "existence," "thing," "object," or "being."[437] The term "machine" is used here in a broader sense than when used in everyday language. Bryant argues that it is just a perception bias that makes us think rocks are physical, tangible, or bodily. Cars, hammers, buildings, and butterflies are different types of machines, but still machines, just as, in Bryant's thinking, reptiles are different kinds of animals from mammals, but they are both animals. The choice of "machine" over the term "being" is rhetorical. What matters is the concept behind the signifier, not the signifier chosen to nominate that concept—maybe this approach also gives more meaning to the words "object" and "actor" that I use throughout the thesis. Bryant considers "machine" to be the term that best focuses on the question of what a being does and how it does. Machinery is an essentially operational view of being. This term does not ask what things are but what they do. It is a framework of concepts designed to

[435] ". . . uṣūl-i meẕkūreden ḥāṣıl olan tortu aşağısında kalan maʿiyyetden tefrīḳ olundığı-ḥālde pek aʿlā gübre olur." [. . . when the residue formed by the mentioned method is separated from the excess remaining below, it becomes a very good fertiliser.] BOA, HR.TO 451/73, 26 April 1869.
[436] BOA, HR.TO 451/73, 26 April 1869; and BOA, HR.MKT 655/78, 9 Rebīʿü'l-evvel 1286/19 June 1869.
[437] Bryant, *Onto-Cartography*, 15.

analyse entities in a particular way. Everywhere the question is how things work and what they do. What does it mean to think of a tree as a machine? Instead of asking what it is and what distinguishes it from all other plant and animal species, it is investigated what trees do, how they work, what they work on, and the like. Trees are seen as machines that transform the flow of water, soil nutrients, carbon dioxide, and gas into cells, fruits, and oxygen and alter the nature of the soil and atmosphere. Machine analysis reveals that institutions like schools and universities resemble machines like trees. Different answers can be obtained when an institution is asked what it does and how it works rather than what it is.

CHAPTER 4

THE COEXISTENCE PROBLEM OF TWO INPUTS

"Science and technology multiply around us. To an increasing extent they dictate the languages in which we speak and think. Either we use those languages, or we remain mute."

— J. G. Ballard, Crash, 1993[438]

4.1 The chicken-egg dilemma of science and technology

In the previous chapter, the infrastructural and financial structures of Ottoman cotton cultivation and production were discussed, and the practical dimension of scientific and technological input, which played a role in these processes, was examined. The main subject of this chapter is how scientific and technological input exists in a relationship and what this association signifies. This chapter will also follow a similar trajectory from the general to the specific. The ongoing debate about the relationship between science and technology is similar to the question of which comes first, the *chicken* or the *egg*. According to the mainstream view in the history and philosophy of science, which can also be called the traditional approach, science is generally preceded in its relationship with technology. Science is a means of communication that makes technology possible. Technology, on the other hand, is the applied form of science and is, therefore, chronologically considered to come after science. In line with an alternative view, which has recently been strengthened by the debates in the field of the sociology of science, technology cannot be deemed secondary in a chronological fashion.

[438] Ballard, *Crash*, 7.

So much so that the practice called technology has come to life in various parts of the world and has existed in every era and every single place on the planet, from the Gardens of Eden of the mythologies engraved on the walls of the caves to the valleys where human and animal sacrifices were made. Based on this understanding, there have been engineers in every age and society, if not scientists—especially when the definition of science is limited to a period extending from when science started to be institutionalised to the present day. Although the characterisation of non-institutionalised practices of knowing as "science" may bring about different problems (*demarcation* is just one of them), technology somehow finds its way in every narrative. In other words, every human being struggling with the conditions of their age has developed and is developing technologies. Moreover, in a sense, this meant that technology was driving science.[439] Thus, with the desire to establish an inclusive language, the difference between the inclusiveness of technology and the inclusiveness of science has been discovered. When it comes to this discussion, the fact that, with language, the world is being rebuilt every day should not be underestimated. Because this alternative understanding, which brings technology to the fore, rejects the ontological knot between science and norms, principles and values, namely culture and essence. Technology is seen as a response to the basic needs of human beings, such as their relationship with the conditions of their age or nature as well as their survival and coexistence under these conditions. In this answer, norms, principles, and values do not originate from technology but from the requirements of the age and the struggle with nature itself. The narrative is limited to historicism, and the conditions of the past turn out to be decisive.

[439] Mauskopf and Roland, "The Historiography of Science and Technology," 5:177.

Biology's visions of the future are in the position of an egg thrown out of the nest by the mother stork in the equation.

For this equation to succeed, cultures without hierarchies, none of which are immeasurable, are required, and nature is set aside. In other words, science and technology are dealt with in absolute relativity. The possibility that all communities may form natures and cultures, only that the extent and speed of mobilisation may differ, is ruled out. The reason why this is a restrictive point of view is that some elements of reality are constructed in and through language and presented as a strict form of relativity. Metaphorically speaking, the man deposed by Nicolaus Copernicus is moved back to the centre. Human beings have been elevated to the position of creating and activating the world through concepts. Thus, historical studies are left to the field of a philosophical language game that stays away from the pursuit of reality. The two contemporary fields most open to speculation and manipulation in this setting are the history of science and conceptual history, accompanied by the unfamiliarity of historians with some definitions and concepts due to their distance from the latest literature on the philosophy of science and technology. Language has been given so much importance that everything is turned into linguistic issues or forms of cultural representation in every transformation, such as the linguistic turn, cultural turn, *et cetera*. Materiality has become almost irrelevant. So much so that the new-fangled approaches, which have the delusion that the mistakes made in the effort to know are experienced in reality, have become the producers of an ideological discourse beyond the then deconstructed concepts of reality and rationality.

So, does this criticism make it necessary to support the understanding that precedes science? No, both approaches suffer from internal problems. In the

understandings that precede science, considering the figures who have a place in the history of technology, such as the American inventor Eli Whitney, despite the distance between them and scientific activities, it can be concluded that it is not possible to have a model that perfectly explains the relationship between science and technology. If so, considering the analogy at the beginning, that is, when the question is asked which comes first, the chicken or the egg, is it not possible to say, the egg dreams of the chicken that will lay itself or the chicken creates the egg that it will hatch? One of them is manifested in human language in the narratives that focus on preceding science or technology. According to these approaches, which hinder the dynamism they generate together, there must be a point of departure and forces activating each other, just like a law of nature. Jens Beckert describes the search for these "laws" as follows:

> Today, most disciplines in the social sciences are much more cautious about the existence of general laws in the social world, and most advocate more limited and historically specific claims. These are often expressed through concepts such as "ideal types," "mechanisms," "middle-range theories," "processes," or "analytical narratives."[440]

This situation, in a way, brings to mind a kind of science envy. In other words, it is seen that disciplines, such as sociology, history, and philosophy, which are essentially different from the natural sciences, try to wear a dress that looks coarse on them. So, other than chasing universal laws that do not work, is there any alternative other than inventing new concepts such as *hybrid knowledge* to explain a pattern of agricultural knowledge in nineteenth-century Ottoman agriculture, for example? How to delve into the nature of scientific and technological inputs reflected in practice and discourse throughout the thesis? How can the chicken-and-egg dilemma be explained if it cannot be presented with a classical *social-construction* discourse

[440] Beckert, *Imagined Futures*, 246.

or an analogy of *hybridity*? When it comes to cotton cultivation and production, many events can be covered, and it is impossible to cluster these events around a single theme so easily. The identity and ideology of the researcher might influence the analysis, the sources s/he decides on in the narrative, and the conclusion to be drawn from them. Ways beyond epistemology, then, need to be explored. In other words, the immeasurable breadth of the sack of epistemology promises nothing new to the researcher.

Some academic trends, such as social or discursive constructivism, based on a reductionist form of the Foucauldian episteme, often claim that objects and things, such as physiological disturbances, scientific objects, etc., are established and determined only by discourse or power relations, that is, social relations and human activities have no reality beyond these discourses and human practices. Social constructivism, which asserts to stamp out the fixity of the subject, paradoxically establishes a discourse universe in which the idea of a world consisting of human discourse and practices is reinforced. Is it possible to identify the forces that enlarge or undermine the production of a commodity in this universe of discourse? It is necessary, then, to reintroduce the presupposition into another scheme of ontological relations. This can be expressed as follows: Human beings do not materially build the world. The entire founding burden is not on their shoulders. People establish a world of translation and experience among themselves. This universe of indicators is a medium where they can share their encounters, finally making science possible. Just as it is not feasible to describe digestion without mentioning the digestive bacteria in the intestinal flora, it is not feasible to write the story of late Ottoman cotton cultivation and production without revealing the entire ontological structure as much as possible.

Then, it might be more accurate to approach this chicken-egg dilemma as follows: the various forces seen belonging to cotton production are those that are produced within and become a resultant of the powers of action of other forces that do not belong to their category at all. Scientific and technological inputs have been inseparable; each one may be creating the illusion that it comes first. In the Latourian sense, things must be seen as an association that constitutes them, modes of existence defined by their power to produce and be affected within a network. In this respect, the most natural approach that can be brought to Ottoman cotton cultivation is the idea that this production was self-organising. Therefore, the best possible way to study any scientific or technological phenomenon is to consider them in their own ontological autonomy without generating new dichotomies, underlining the difference without separating one from the other. There is a distinct aspect to this in most areas of the natural sciences, such as physics, chemistry, or geology. For a similar understanding to be established in the humanities partially without contradiction, it is necessary to focus on differences. An objection may be raised to this point: Then, should botany and agricultural chemistry speak on cotton and cotton production processes?

The answer to this question is both yes and no. Humanities scholars have to defend their own academic habitat. They should do it while they still can. There is one field that is still outside the realm of the natural sciences until something changes as a result of the ultimate spread of science to other disciplines. The natural sciences often reduce what they claim to be independent of humans either to their components, i.e. their more minor constituents or their relations, i.e. interactions among themselves. According to Graham Harman, this is the conviction that the real elements can, in any case, be the smallest components and that everything can be

reduced to them. It is called *smallism*.[441] These reductions are not useless and are sometimes unavoidable. For example, the answer to the question of how organic life 'arose' is not in biology which is the science of the interactions of organic life 'once it emerged'—at least for now. Nevertheless, for example, when it comes to the yield of cotton production in the Ottoman Empire, botany, agricultural chemistry, or economics falls short of explaining the interactions of the phenomenon when the phenomenon is reduced to *scientific* investigation per se. This methodology never examines the possible future (virtual) dimensions of the phenomenon and anything other than its relationships, or those who are outside the moment when it experiences their existence at that moment. For this reason, a new method is required at this *virtual* level when the ontological realities of things, such as their arrangements or associations, are affected by their intricate networks. This explanation is an alternative that does not emulate the natural sciences. If the study of social phenomena is necessarily to speak of 'agency,' it must be seen in terms of arrangements of networks as a whole, not people, the society, or other isolated concepts. In other words, the agency of cotton, science, technology, or politicians alone has no explanatory function under this setting.

The study of non-economic phenomena that falls outside the methods of the natural and social sciences falls within the scope of history. To reveal the structure of this role, it is necessary to focus on how the structure of the ontological relationship between science and technology is dissolved within each other. In the next section, this dissolved structure will be examined in the works of British actors who stand out in cotton production. Thus, it will be seen how scientific and technological developments overflow and spread to other fields and how they dominate these fields

[441] Harman, *Object-Oriented Ontology*, 30. For more detailed information, please see Coleman, "Being Realistic: Why Physicalism May Entail Panexperientialism," (2006).

in a methodological sense. The extent of the domain of this phenomenon is beyond the question of how science is perceived because science has enlarged its sphere of influence, whether or not it is seen as a "saviour" or "healer" within the empire's borders.[442] This domination has no derogatory meaning other than the inability of non-capitalist classes to keep up with the changing order.

Injudiciously claiming that scientific and technological input prevented the repetition of some local experiences or that they were quickly adopted as the so-called 'modernising' tools and turned into 'violent' state policies means assuming that every invention and every contemporary approach embraced the entire Ottoman geography, touched upon every knot in the social fabric, and that every action was structured from head to toe in a specific pattern. On the contrary, it is a reality pointed out by historiography that there is a living dynamic between actions, actors, networks, and phenomena. For instance, in this approach, the role of commercial activities is handled differently than in classical methodologies. It is not trading that purports to be a "zero-sum game," which drives and builds the economy, but the pooling, coordinating, and even redistribution of previously scattered energies.[443] This is precisely what those involved in the cotton business in the Ottoman Empire experienced from the second half of the nineteenth century. The functional

[442] Although it has become almost impractical to make definite comments on the perception of science due to the convoluted nature of networks, the desire and tendency to benefit from scientific developments, regardless of their success or failure, is seen in the educated segments of the society. In this respect, Burçak's interpretation of this group's perception of science is quite reasonable: "*Scientism* here refers to a utilitarian approach to science, i.e. the acknowledgement of and pursuit of science as a useful and applicable category of knowledge, and a strong belief in the authority of science as a modernizing force to bring about the salvation of the empire." Burçak, "Modernization, Science and Engineering in the Early Nineteenth Century Ottoman Empire," 69 (emphasis added). Nonetheless, it should be commented that it would be more correct to look at the phenomenon as an 'object' that cannot be controlled in the intrinsic nature of networks and has its own autonomy. The *unamendability* feature of scientific and technological input mentioned in the introduction of the thesis gives the phenomenon a sort of autonomy (*cf.* footnotes 4 and 9). Perhaps the most crucial reason for the expansion of the rule and domain of science is this state of unamendability. In other words, it is the one that throws a spanner in the works of the relativity that social constructivism strives to establish.

[443] Latour and Lépinay, *The Science of Passionate Interests*, 38.

(practical) relationship between scientific and technological input needs to be examined for comprehending this situation better.

4.2 The relationship of scientific and technological input in practice

During the American Civil War, although the British wanted to carry their own experience, knowledge, and equipment to Turkey to grow cotton with their own hands, their demands were sometimes accepted and sometimes not. For example, the British citizen Thomas's request for a field to cultivate in Cyprus was rejected.[444] In another example, the British offer to drain the swamps in Adana for cotton cultivation was dismissed.[445] Corresponding to MacFarlane, this was due to the Sublime Porte's excessive scepticism, which occasionally turns into a conspiracy theory against British agendas.[446] According to İlhan Tekeli and Selim İlkin, the desire of foreign capital to enter production directly by establishing large farms, which was defined by Tekeli and İlkin as a "colonisation project," was not accepted because the Ottomans did not tolerate this along with the fact that the labour problem

[444] BOA, HR.MKT 336/67, 11 Ẕi'l-ḳaʿde 1276/31 May 1860; and "The Capabilities of Turkey," *The Money Market Review* (2 August 1862): 95. It is said that the population of foreigners in western Anatolia, together with their families, reached 17,500 in 1847, despite the suspicions and difficulties caused by the Ottoman government toward foreign capital. Of the 123,787 people living in Izmir in 1860, 28,352 were foreigners. Kasaba, *The Ottoman Empire and the World Economy*, 70.

[445] US Congress, House, *Letter of the Secretary of State, Transmitting a Report on the Commercial Relations of the United States with Foreign Countries, for the Year Ended September 30, 1863* (1865), 516. Examples can be multiplied. According to British consul reports, foreign initiatives were not welcomed also in Sayda (Sidon), Lebanon. Abela [Vice-Consul], "Inclosure in No. 2. Précis of Reports upon the Cultivation of Cotton. Syria and the Island of Cyprus. Sidon," in *Turkey. Circular to Her Majesty's Consuls in the Ottoman Dominions Regarding Cotton Cultivation; together with a Summary of Their Replies* (1865), no. 3498, at 57:28.

[446] "'No!' said my Turk, 'if Europeans were to come among us in that way, and to hold estates, they would soon drive us out of the country!'" MacFarlane, *Turkey and Its Destiny*, 1:175. There are similar statements in the sources of the period that financial capitalism was prevented from entering Turkey: "The objections raised to European capitalists investing their money in land in Turkey is stated to be the imperfection and corruption of the [a]dministration . . . ." Herbert [Lieutenant-Colonel], "Inclosure in No. 5. Lieutenant-Colonel Herbert to the Secretary to the Government of India," in *Reports Respecting Communication with India Through Turkey, by the Euphrates Valley Route* (1872), c. 534, at 45:18. In this respect, the Ottoman Empire was a marginal supplier of raw cotton compared to Egypt, India, and other British colonies.

was not resolved.[447] However, there were precedents where foreign capital set up exemplary farms. Foreign capital, which could not establish model farms, preferred other ways to participate in the production. Tekeli and İlkin are not only mistaken in enlarging and criminalising the role of foreign capital, but also the available evidence does not corroborate the engagement of foreign investors with a "colonisation project." Yet, foreign names such as James Baker provided advice for investors. According to him, owning land in Turkey was a safe investment.[448] Land ownership policies in the Ottoman Empire were a tangle of contradictions.

The Hansard record of UK parliamentary debates adds yet another inconsistency to this tangle of contradictions. Even though it was stated in a meeting that foreigners could not legally own land, it was mentioned that the Ottoman government was generous now and then. Moreover, the following sentences of a British Parliament member were recorded: "By several ingenious fictions of law, which it is not necessary to describe, foreigners are virtually enabled to possess land, and I have never heard of an instance in which they have been deprived of it."[449] Accordingly, in her detailed study on foreigners who could own real estate with different strategies, Mübahat S. Kütükoğlu designates three ways: (i) obtaining a *ḥüccet*—title or deed in the sense of proof—showing that the property belonged to them by very intricate means, (ii) transferring the real estate they bought to their

[447] Tekeli and İlkin, *Osmanlı İmparatorluğu'nda Eğitim ve Bilgi Üretim Sisteminin Oluşumu ve Dönüşümü*, 56. A similar approach can also be discerned in Taner Timur, please see Timur, *Marx-Engels ve Osmanlı Toplumu*, 87. A series of legal and institutional developments, such as the Anglo-Ottoman Trade Convention of 1838, the nativeness (or *Osmanlılık*) of the Ottoman Bank, the *Düyūn-ı ʿUmūmiyye* (Public Debt Administration), or the Tobacco Régie along with its monopoly, were interpreted as the conquest of the Ottoman Empire from within, and a "colonial" or "semi-colonial" discourse was dominated stretching from primary schools to graduate programmes.
[448] Baker, *Turkey in Europe* (1877), 484. Furthermore, reports indicate that domestic actors do not want to share their privileges with foreigners. BOA, HR.SFR.3 91/13, 23 July 1864.
[449] 171 Parl. Deb. (3d ser.) (29 May 1863) cols. 6–148.

spouses or another relative, who were Ottoman subjects, and (iii) gaining the right to own the real estate they rented by incurring expenses that the owner could not pay.[450]

Through these ways, foreign actors who wanted to move their capital to the Ottoman lands started to show their presence in the sectors in which they were experienced, as the Ottoman state tacitly, if not explicitly, recognised some rights, such as retail trade, owning immovable properties, or obtaining operating licences.[451] Thus, foreign enterprises operating in many fields, from mining to cotton farming, from cotton farming to railway construction, have become an indispensable part of commercial life, especially in the southern Balkans and western Anatolia. Like a religious covenant, they attempted to harbour three things with them: (i) capital, (ii) machinery, and (iii) knowledge. They believed that they would overcome infrastructure problems with capital, that they could stimulate production with technology made possible by capital, and that they would defeat natural and artificial problems with the repertoire of science, which has been evolved into an indistinguishable relationship with technology. When they saw that the cooperation, they tried to establish was not efficient enough, they desired to bring the unity of science and technology to the Ottoman lands with their own hands and autonomy with their capital. In the eyes of British entrepreneurs and consular staff, the Ottoman government was blind and indifferent to the advantages of its lands.[452] This attitude

[450] Kütükoğlu, "Tanzimat Devrinde Yabancıların İktisâdî Faaliyetleri," 111.
[451] Frangakis-Syrett, "Implementation of the 1838 Anglo-Turkish Convention on Izmir's Trade," 110.
[452] White [Vice-Consul], "Turkey. Cyprus. Report, General and Statistical, by Mr. Vice-Consul White," in *Commercial Reports Received at the Foreign Office from Her Majesty's Consuls between January 1st and June 30th, 1862* (1863), no. 3229, at 70:472. In addition, there were no monocropping tendencies in the Ottoman lands, dating back to the 1810s, as in Egypt. While the Ottomans were pursuing incentive policies, the Egyptian administration largely decided what would be cultivated in the fields of Egypt, systematised the necessary scientific knowledge, and provided the essential capital or opened the new ways to capital. The state was the largest intermediary between the merchant and the farmer. Owen, *Cotton and the Egyptian Economy*, 24. According to Beckert, cotton cultivation in Egypt was largely successful because Mehmed Ali Pasha had a monopoly on violence. Beckert, *Empire of Cotton*, 132. In 1833, while there were even no statistics in Anatolia, there were 30 cotton factories in Egypt. Owen, *Cotton and the Egyptian Economy*, 45. It was as if the Egyptian government

is one of the most traditional perspectives of colonialism. While the coloniser sees the place to be colonised as an 'opportunity space,' he wants to have a moral advantage over the former owner of this place. In this respect, the coloniser's excuse is ready, the fertile lands lie like a corpse, and invigorating this corpse is a morally correct move. To understand this tendency, the example of the *Düyūn-ı ʿUmūmiyye* (Public Debt Administration) and the *Régie* Company can be used. A historian may speak highly of these organisations for providing financial discipline in the Ottoman economic administration, increasing the gains in tax assessment, or their benefits in agriculture. On the other hand, is it possible to defend an organisation with its own law enforcement mechanisms (e.g., *kolcu*s—"the armed surveillance unit(s) of the tobacco monopoly")[453] that have caused numerous tensions, as one would defend a charity? Even without the tensions mentioned above, equating a charity with a creditor still makes no sense. This area is also a place with no black and white.

As a matter of course, this approach ignores Ottoman actors from both the bureaucracy and the merchant class. In the section where financial and infrastructural problems were discussed, many Muslim and non-Muslim Ottoman actors had taken the stage. Nevertheless, it should be noted that although the money/cash foundations (*para vaḳıf*s) in the Ottoman Empire gave consumer loans, entrepreneurial financing remained limited in the Islamic world due to the small amount of loans to entrepreneurs. Besides, according to Gad G. Gilbar, what made the non-Muslim population advantageous was that they had settled in port cities in addition to the capital they had, and foreign non-Muslims could communicate with Muslims through local non-Muslims and had some commercial privileges. They also had a monopoly

and Egyptian agriculturalists were preparing, albeit unaware of everything, for the opportunity of the American Civil War.

[453] Birdal, *The Political Economy of Ottoman Public Debt*, 138–39.

on information. In other words, when exporting products, they were familiar with the demand and marketing patterns in European countries.[454] Seeing that the local actors could not achieve the desired efficiency in time, the foreign actors wanted to implement their projects without involving other actors. All they needed was a piece of land where they could have the autonomy to bring together the latest tools and machines for scientific farming as well as cotton cultivation. When they did not carry out the agricultural practice they desired on such a piece of land with their own hands, neither the infrastructure problems could be solved as they wished, nor the transfer of scientific knowledge and technology was achieved as they dreamed of.

In addition, despite the increasing demand for Ottoman goods in European markets, foreign actors were not yet able to operate in the inner regions of the empire, which was still an unstable market. The excessive competition between local and foreign actors also surged the prices of Ottoman goods to a level that would deprive them of competitiveness in European markets.[455] Especially in times of famine, intermediaries, brokers, and speculators found a broader scope for action. For example, in this period, samples were taken before the bales, and a process in which purchases were decided on the selected specimen started.[456] Thus, it was very challenging for foreign actors to establish a functioning network among all actors in a region where numerous actors were located and not under the control of a central and imperial command. The British actors, by and large, recognised that they could not shape the Ottoman geography as they desired. For instance, until 1865, the licence for cotton ginning establishment was taken from the centre, and the process

[454] Gilbar, "The Muslim Big Merchant-Entrepreneurs of the Middle East," 24–25. In addition, they mastered the local tastes and spoke the languages necessary for doing business. On the other hand, local actors had advantages in local credit facilities. Frangakis-Syrett, "Western and Local Entrepreneurs in İzmir in the Nineteenth and Early Twentieth Centuries," 82.
[455] Frangakis-Syrett, "Uluslararası Önem Taşıyan Bir Akdeniz Limanının Gelişimi," 36–37.
[456] Beckert, *Empire of Cotton*, 209.

of obtaining this licence was sometimes long and sometimes utterly frustrating.[457] They could not penetrate new regions, if they had such a purpose, not only because they could not carry private or state-centred violence mechanisms and their own rule systems from geography to geography but also because of the differences arising from the physical structure of each region.

There are many variables, including but not limited to different precipitation regimes, various soil types, and farmers' expectations of the soil and crop. Insomuch that if the roots of the cotton plant reach some harmful chemicals under the ground, it may negatively affect the harvest. Sometimes expectations come into play, and, fearing famine, small-scale agriculturists find it more plausible to plant subsistence crops. Even though cotton farming requires new ways of growing, cleaning (ginning), and getting to market (transportation), local farmers do not always want to go to the trouble of pouring new wine into the old bottles—it was even the case for the American seed, which was the most productive among the seeds in question. At this point, although not as strong as the economic conditions, even some religious issues could be influential and preclusive. For example, in the land that John B. Paterson purchased from Karamanoğlu Hüseyin Efendi, the peasants opposed the drudgery because of Paterson's non-Muslim identity, and yet another example of pouring new wine into the old bottles was in C. S. Hanson's farm to persuade the farmworkers who were suspicious of the British plough.[458] It seems that he did carry out two-year experiments with this plough and only then convinced the farmworkers with the results of the experiments.[459] In other words, the desires and expectations of the parties were different from each other. There may well be a choice between risk

[457] "Cotton Cultivation in Turkey, Speech by Mr. Hyde Clarke," *The Guardian*, 12 August 1864, 3.
[458] Kurmuş, *Emperyalizmin Türkiye'ye Girişi*, 81, 89.
[459] Ibid.

and security. However, the domain of power that scientific and technological input derives from the principle of unamendability is revealing itself here (*cf*. footnote 9).

Foreign actors also preferred iron plough instead of hoe and primitive plough in line with their own conditions. This tool, which was not necessary for small lands, was one of the *sine qua non* for more extensive lands. For example, the benefits of new technologies would not be able to be ignored for weed removal. At least some foreign actors understood that some processes could not be easily separated from one another. Well, were they more conscious than local actors about having this understanding? It is complicated to give a definite yes or no answer to this question. Just like the local actors, they have taken the proper steps and made the necessary analysis, but there have also been entirely wrong steps and miscalculations. Rather than evaluating the nineteenth-century Ottoman cotton production activity as merely a reflection of foreign demand, this approach provides new insights to wade through how these steps and analyses measure up to reality. Even though it is widely said that the increase in cotton production occurs in regions already producing for world markets, this is also a reductionist approach in the end. Although there is a significant difference between the production rates of the regions for world markets (coastal regions in general), cotton production has also increased in some unexpected areas that do not specifically produce for world markets like Amasya, Diyarbakır, Urfa, or Van, among many others. Variables such as plans shaped by expectations, infrastructure problems, and financing emerge in the field of scientific and technological input. It is unfathomable to consider one of them separately from the other. Despite being aware of this situation, the CSA was less willing to take on the failure while it took on the apparent success.

For example, in a speech published in *The Journal of the East India Association*, Hyde Clarke compares the experience of cotton farming in India and the Ottoman Empire. His main claim is that there is no difference between the experience of these two geographies. In his article focusing on similarities, he further attributed all the success to the CSA and the failures to local actors: ". . . wherever they carried out those measures which were recommended to them by the [CSA], there they succeeded; wherever they neglected them or delayed them, they are suffering from the consequences of their neglect."[460] This approach ignored the problems and reality of not only the centre but also the local people. The analysis of the situation of the farmers, who were crushed under the tax burden imposed by the central administration, avoiding commercial agriculture, and focusing on subsistence farming under the heavy debt load, remained incomplete.[461] For instance, conflicts between ortakçıs (sharecroppers), çiftlik (estate)-holders, and the subaşıs who run the farms were not included in the narrative at all (*cf.* footnote 141). However, the same Hyde Clarke had also given a speech at the CSA meeting in Queen's Hotel in 1864, addressing the administrative differences between Egypt and Turkey.[462] Even more unreasonably, without any data to support his assertion, Hyde Clarke claims that, the geographies that he does not see as equal will not only develop agriculturally thanks to cotton farming, but those regions will thrive in a much more 'comprehensive' way: "As cotton cultivation particularly *stimulates intelligence* and *improvements in*

[460] Frere and Fitzwilliam, "The Product of Cotton in India: Meeting at the Society of Arts, June 30, 1870. Future Prospects. Mr. Hyde Clarke," *Journal of the East India Association* (31 March 1870): 194–95. A similar reductionism has been demonstrated in Egypt as well. The same recommendations were made for all three regions, as if there were no differences between them. "On lit dans le *Manchester Guardian*," *Journal de Constantinople*, no. 1644, 29 August 1861, 2.
[461] Kaya, "19. Yüzyıldan 21. Yüzyıla İzmir Ekonomisinde Süreklilik ve Kırılmalar," 50. In narratives where even social problems are ignored, old-fashioned object-object relations, such as precipitation regimes and soil structure, can only find a place for themselves in footnotes. For a more up-to-date study of precipitation regimes in Turkey, please see McNeill, *The Mountains of the Mediterranean World*, 21.
[462] "Cotton Cultivation in Turkey, Speech by Mr. Hyde Clarke," *The Guardian*, 12 August 1864, 3.

agriculture, it has the effect, as has been seen in some parts of India and in other parts of the world, of *improving all modes of culture*."[463]

Hyde Clarke was not just a CSA's senior official and a well-known Freemason.[464] He also came to the fore as a renowned social scientist, anthropologist, engineer, accountant, statistician, journalist, and traveller of the period. Clarke had the opportunity to travel or work in many countries and closely observe the geographies and people he wrote and drew about. Therefore, it is a disappointment that he could not reflect in his analyses that communities from different religious and ethnic backgrounds lived in a peculiar reality in the Ottoman Empire. For example, spare parts of British machines transported to western Anatolia were stored at the Izmir-Aydın Railway stations. Thus, when a malfunction occurred in the machines, the necessary change was carried out with the help of the railway employees.[465] However, many peasants did not have such an opportunity. Moreover, although Hyde Clarke is an Englishman who does not fit into today's caricatured Orientalist schema, though he still maintains the Orientalist discourses of his period from time to time, he adopts an attitude that homogenises the internal differences between the Ottoman state and India. This attitude has been grossly neglected by those studying the history of the CSA. Yet, in a comparative analysis, two cases or phenomena

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[463] Frere and Fitzwilliam, "The Product of Cotton in India," *Journal of the East India Association* (31 March 1870): 194–95 (emphases added). It was also common among many travellers to despise the local people in terms of intelligence and skill. Blunt, *The People of Turkey* (1878), 1:189. Even in more balanced and relatively fair narratives, the so-called "cultural" reason was sought for the failure of Turkish farmers with a highly essentialist approach: "But the religion, morals, and social customs of the people, the tenure of property, and the political institutions of the country, are all adverse to agriculture, commerce, and industrial enterprise." Bentley, *The Second Cotton Famine, and How to Prevent a Third* (1866), 17. Yet, the Turks—meaning Muslims—were only a part of the actors. Considering the foreigners and non-Muslim locals engaged in cotton farming, it is difficult to estimate which group corresponds to what percentage.

[464] Morris, *Freemasonry in the Holy Land. Or, Handmarks of Hiram's Builders: Embracing Notes Made During a Series of Masonic Researches, in 1868, in Asia Minor, Syria, Palestine, Egypt, and Europe, and the Results of Much Correspondence with Freemasons in Those Countries* (1876), 50.

[465] Families such as Whittall, Paterson, Van Lennep, and Baltazzi allocated large budgets for machinery. Kurmuş, *Emperyalizmin Türkiye'ye Girişi*, 91.

could possibly be regarded as separate and fundamentally unrelated. Worse still, the study may go no further than an attempt to justify the author's convictions. Often, the author is not even aware of this because too much contact with the object of interest inevitably complicates or distorts the results. Therefore, many variables and details are ignored or deliberately eliminated. Thus, the analyst is left with either an essentialist critique or carefully chosen apologist excuses at the end of the day.

The fact that the CSA did not present a sincere and realistic critique may explain the desire of British actors to have an autonomous structure at some stage. They demanded this autonomous structure, including the lands on which they could implement the latest methods and put scientific and technological inputs into practice along with their facilities. Despite their mistakes, there was a grain of truth in their wishes. According to years of experience in various parts of the world, technology, science, capital, and politics were more closely connected than anticipated. These ties were so tight that sometimes they became invisible, resulting in a chaotic environment due to their intertwining. Capital did not solve all quandaries. In addition to the finances, a political domain was also required. However, only such an area could both provide scientific education and fully realise technology transfer. Foreign actors have always had one or two. Once they had capital, their dominance was curtailed. When their domination was not restrained, problems arose in which their capital proved futile. The most reasonable solution they could find in such an environment was to play in their own national garden. But their national gardens, such as Britain's, were not suitable for cotton cultivation. What was to be done then? The national garden had to be moved and disseminated. They could move their instruments to some places. They wanted to undertake something similar in western

Anatolia and the southern Balkans as well. While this had dire consequences in some areas, it was not just a malicious intent either.

The model farm that W. P. C. Salvago wanted to establish is one of the most apparent manifestations of the desire for autonomous structuring. There were various correspondences between the CSA, which supported this project the most, and the Ottoman government. After protracted negotiations, the project was tendered to Salvago in Balıkesir and Bergama in 1863.[466] It was seen that some aid was given to British actors in earlier dates, too. For instance, some companies demanded lands free of charge for cotton cultivation. It was reported that these lands should be exempted from all kinds of taxes for ten years due to some costs, such as infrastructure and imports—the exemption for the export duty was five years.[467] Instead, the land tax to be accrued per acre would be determined between the state and the company. These initiatives, which were relatively free in their activities on the land, were made subject to Ottoman laws. Nonetheless, as was customary most of the time, the Ottoman state accepted some demands while rejecting others in these enterprises. The main reason for this uneasy attitude of the state was that those who would cultivate the lands were predominantly foreign entrepreneurs, and they were demanding too much tax exemption in the eyes of the state.[468] Technology, science, capital, and politics were supposed to be tightly interconnected, but the parties would soon get to the point that an environment to realise this would not be attainable. Long story short, the answer to the question raised in the sub-heading of the "chicken-egg

[466] BOA, HR.TO 377/25, 17 July 1863; and BOA, MVL 649/13, 13 Cemāẕīyyü'l-evvel 1280/26 October 1863. The absence of the name of this actor in foreign sources gives the impression that the name was entered incorrectly in the Ottoman state records.
[467] BOA, MVL 845/64, 25 Rebīʿü'l-āḫir 1278/30 October 1861.
[468] Ibid.

dilemma" is obvious. The egg can and has imagined the chicken that will lay itself. However, the American Civil War was over before this dream could materialise.

4.3 Cotton cultivation after the American Civil War

As a result of the steps taken during the American Civil War, although the expectations of local and foreign actors were not met, there was a noticeable increase in cotton production, which is beyond dispute. It is possible to see this increase in the Balkans and Anatolia (especially western Anatolia—Izmir/Smyrna and its surroundings). Figure 5 below indicates the general cotton exports of the Ottoman Empire to Britain, and Figure 6 illustrates the cotton exports specifically from Izmir (both in terms of quantities). On the other hand, Table 4 and Table 5 underneath display the actual and tariff values of cotton yarns and cotton manufactures imported from Britain to the Ottoman Empire, respectively, between 1861 and 1866, in British pounds sterling. These figures are indicative as they reflect the partial increase in cotton production. There was a noticeable decline from 1865, immediately after the American Civil War. The United States quickly returned to the market, and the new entrants lost their market shares one by one due to various problems they could not solve. Since the statistics kept are scattered, increases or decreases that do not change the overall trend are likely. Although the raw cotton imported from the Ottoman Empire did not satisfy the British demand, it can be assumed that the cotton manufactures and cotton yarns the British exported to the Ottoman Empire relieved their disappointment to some extent (see Figure 7 and Figure 8 below for statistics between 1861 and 1866).

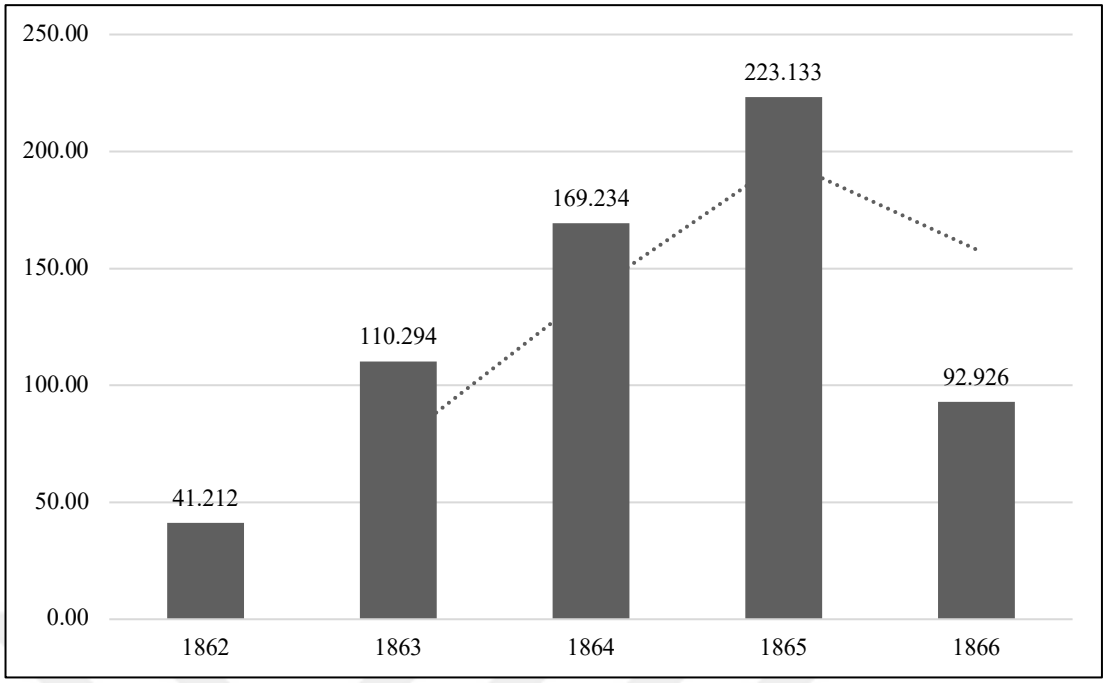

Figure 5. Raw cotton exports from Turkey to the UK, 1862–1866 (in cwts)[469]

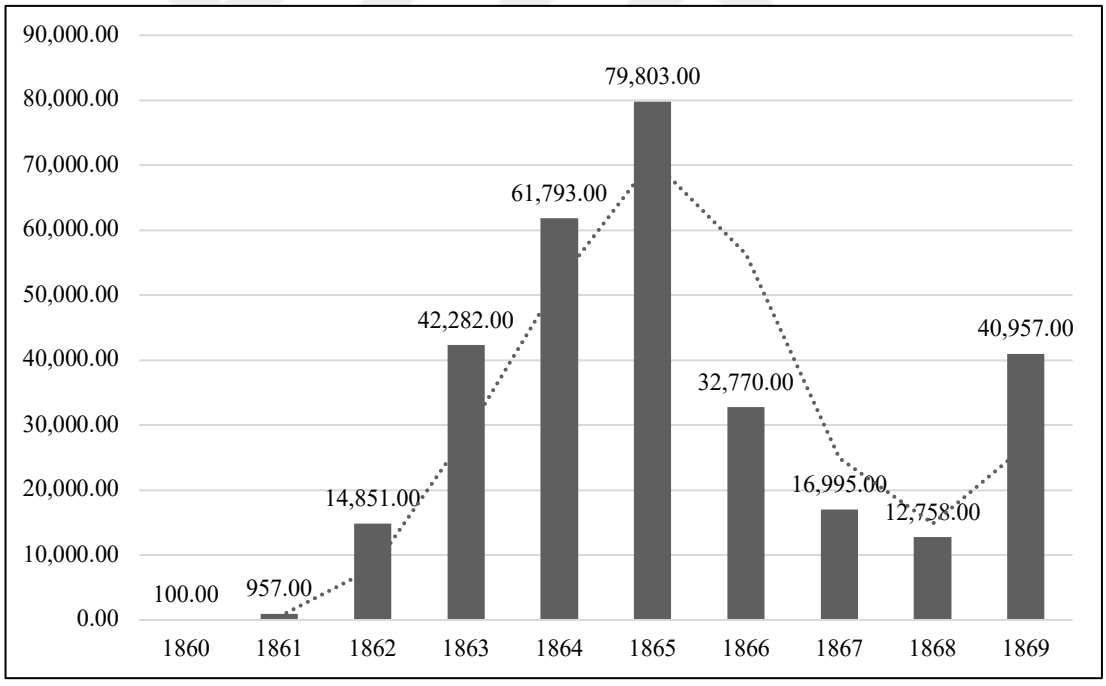

Figure 6. Raw cotton exports from Smyrna to the UK, 1860–1869 (in bales of 400 lbs each)[470]

[469] BOA, HR.SFR.3 118/15, 5 January 1867.
[470] Watts, *The Cotton Supply Association* (1871), 7.

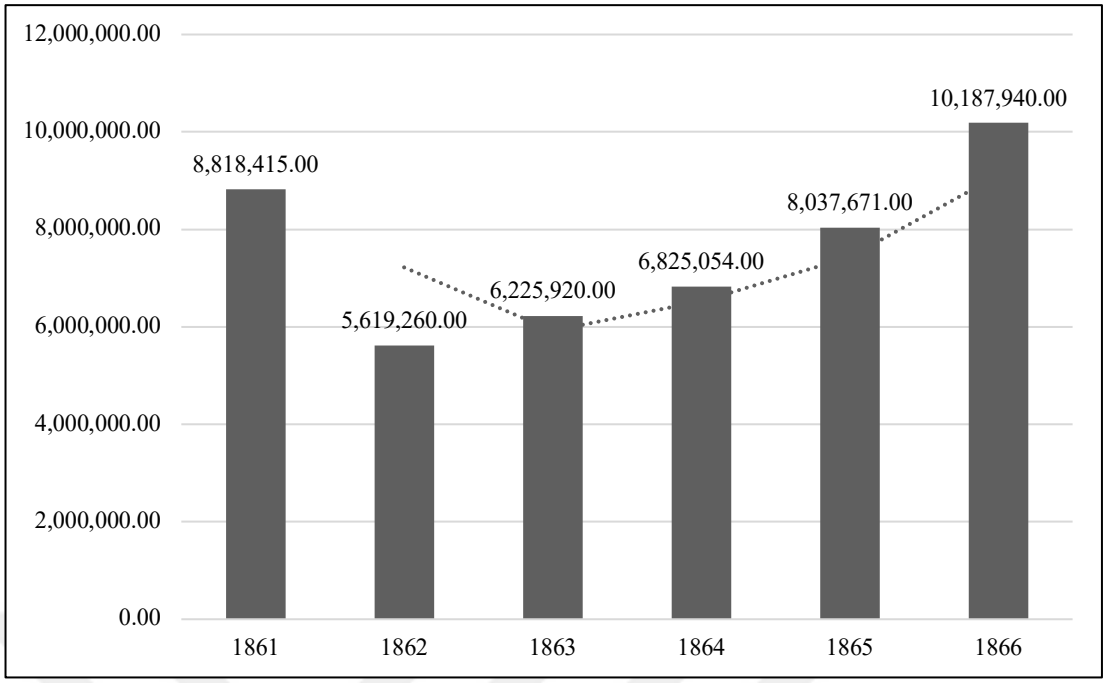

Figure 7. Cotton yarns, imported to Turkey and Syria from the UK, 1861–1866 (in lbs)[471]

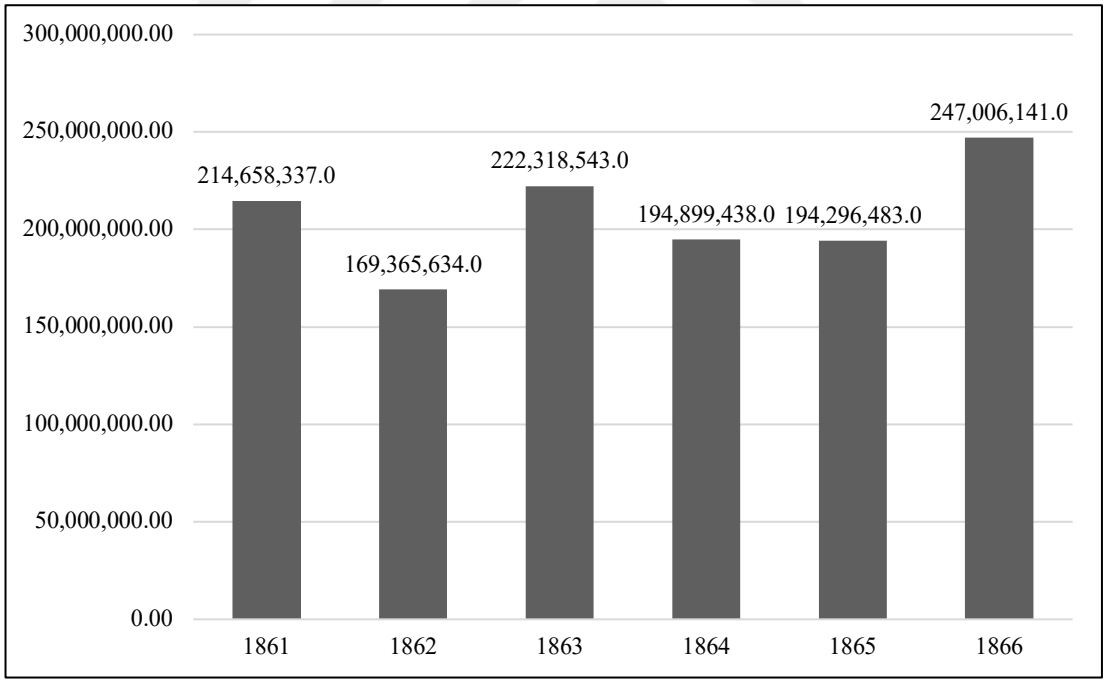

Figure 8. Cotton manufactures, imported to Turkey and Syria from the UK, 1861–1866 (in yards)[472]

[471] BOA, HR.SFR.3 118/15, 5 January 1867.
[472] Ibid.

Table 4. The Actual and Tariff Values of Cotton Yarns Imported to Turkey and Syria from the UK, 1861–1866[473]

Year	Actual value	Tariff value	Import duty	Import duty, *ad valorem*
1861...	£407,762...	£407,762...	£32,000...	£32,000
1862...	330,000...	255,000...	22,000...	27,000
1863...	598,835...	285,000...	24,000...	48,000
1864...	809,623...	310,000...	25,000...	64,000
1865...	681,185...	370,000...	30,000...	55,000
1866...	837,105...	460,000...	37,000...	65,000

Table 5. The Actual and Tariff Values of Cotton Manufactures Imported to Turkey and Syria from the UK, 1861–1866[474]

Year	Actual value	Tariff value	Import duty	Import duty, *ad valorem*
1861...	£2,746,553...	£2,746,553...	£220,000...	£220,000
1862...	2,687,637...	2,200,000...	176,000...	215,000
1863...	4,530,835...	2,850,000...	230,000...	360,000
1864...	4,783,883...	2,500,000...	200,000...	380,000
1865...	4,643,537...	2,500,000...	200,000...	370,000
1866...	5,706,862...	3,150,000...	250,000...	455,000

More specifically, what exactly was this trend in the post-war period? Notwithstanding the fact that cotton production abated after the American Civil War,[475] this did not mean it was over. Cotton seed imports were carried on with even after the war. With a slight delay, in 1866, the Sublime Porte decided to award a medal as a token of gratitude to those who contributed to the growth of cotton production within the empire's borders. Here, it is necessary to mention the mutual bestowal of medals. In 1865, the CSA had presented the Ottoman minister of

[473] Ibid. Figures are given in British pounds (£).
[474] Ibid.
[475] Mudge and Nourse, *Report upon Cotton* (1869), 45.

commerce and his undersecretary with medals for their outstanding care and contributions to cotton cultivation.[476] Gold and silver medals bearing the *ṭuġrā* (imperial calligraphic monogram) on one side and the symbolic depiction of agriculture on the other were produced at the imperial mint. The gold medals were sent to Sir Henry Bulwer, Musurus Bey,[477] and William Sandford via the French Mail.[478] Apart from President Reşad Bey, Messrs Hyde Clarke, John B. Paterson, Frederick LaFontaine, Thomas Bowen Rees,[479] James Gout, Mustafa Efendi, Pergob, and Offley, who served in the Smyrna Cotton Commission, were also awarded gold medals. Other commission members, İbrâhim Efendi and Dibran, were given silver medals.[480] One year later, in 1867, an Ottoman cotton sample received one of the grand prizes at the Paris International Exposition (*Exposition universelle de 1867*).[481] *The Guardian* reported that the Ottoman government's policy towards cotton cultivation deserved British gratitude: "It is to be hoped that Europe will not fail to recognise that during the cotton crisis, the policy of His Imperial Majesty the Sultan towards us has been distinguished by friendliness and generosity."[482]

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[476] BOA, A.}MKT.MHM 325/2, 17 Ramażān 1281/13 February 1865.
[477] Known to be the owner of cotton fields in the Balkans, Musurus Bey was one of the bureaucrats most praised by the CSA. It would not be wrong to designate Musurus Bey, one of the most pivotal figures between the CSA and the Porte, as the most mentioned Ottoman actor of the period. Watts, *The Cotton Supply Association* (1871), 60.
[478] BOA, HR.SFR.3 110/16, 16 January 1866; and BOA, HR.TO 56/45, 8 February 1866.
[479] In 1853, taking advantage of the Crimean War, he came to Izmir from Manchester to trade in industrial paints. The family was originally from Wales. He was engaged in the dye trade and cotton weaving in Izmir. Founded in 1863 under the name of the Asia Minor Cotton Company, he bought an extensive amount of lands in Nazilli, Menemen, and Bornova. Thomas Bowen Rees owned 2,000 shares of this company. After a relatively prosperous period, the company reduced its activities when western Anatolia's importance in cotton cultivation plunged, and it dissolved itself in 1893. Demirbaş, *Rees Köşkü*, 95.
[480] İbrâhim Efendi was the commission's secretary, and Dibran was its dragoman. "Turkish Cotton," *The Standard*, 17 January 1866, 2; "The Promotion of Cotton Growing in Turkey," *The Western Daily Press*, 18 January 1866, 3; and "Cotton Supply Association," *The Manchester Courier and Lancashire General Advertiser*, 1 February 1866, 3. One of the medal winners of this period was Charles Alison, the British Ambassador to Tehran, who supplied Indian cotton seeds to the Ottoman Empire, particularly to the Van region. BOA, HR.MKT 544/7, 23 Ẕi'l-ḥicce 1282/9 May 1866.
[481] Mudge and Nourse, *Report upon Cotton* (1869), 94.
[482] "The Turkish Cotton Trade," *The Guardian*, 15 February 1867, 4. One of the reasons why a restrained and hopeful language was still used concerning cotton cultivation was the CSA's conviction that with the new post-war labour system, that is, cotton production would not be the same after the

During the visit of Sultan Abdülaziz to London in 1867, cotton negotiations also remained on the agenda. A delegation from the CSA[483] stayed at Buckingham Palace to inform Abdülaziz of the gravity of expanding cotton cultivation in the Ottoman Empire and to congratulate him for what has been achieved in this direction.[484] The delegation expressed their gratitude for the distribution of cotton seeds, the gratuitous use of uncultivated *mīrī* (state) lands as well as their exemption from tax for five years, the possibility of customs-free import of tools and equipment for cotton cultivation, reductions in import duties of British industrial manufactures, and finally the latest regulations regarding the expansion of foreigners' right to own private property in the Ottoman Empire.[485] Furthermore, the delegation warned that with the end of the American Civil War, the re-entry of the United States into the cotton market might change the balance of trade. They presented recommendations for the continuation of the efforts made during the Civil War period. They also stated that the CSA welcomed the news about foreigners being able to own land in the Ottoman Empire (except for the Hejaz region) from now on.[486] Despite all these, the reason for not demonstrating the success expected by the CSA in the following years

abolition of slavery. Cotton Supply Association, *The Third Annual Report of the Executive Committee, to which is Added a Report of the Proceedings at the Annual Meeting, Held at the Town Hall, on Friday, May 11th, 1860, and a Review of the Present Position of the Cotton Trade in Reference to Supply* (1860), 5.

[483] The names in the delegation are as follows: John Cheetham (President), Edmund Ashworth (Vice-President), Isaac Watts (Secretary), Hyde Clarke, Colonel Gray, Edward Walmsley, George Hadfield, H. A. Hurst, Hugh Mason, J. B. Smith, J. M. Bennett, J. T. Hibbert, John Laird, John Platt, Joseph Fielden, Malcolm Ross, N. Eckersley, T. B. Potter, William Armitage, William Graham, and William Jackson. "The Cotton Supply Association and the Sultan," *The Guardian*, 16 July 1867, 6. Edhem Eldem informs that the committee consists of 24 people. For a more detailed account of the meeting, please see Eldem, "İktisat Tarihiyle Sanat Tarihinin Bir Kesişmesi," 76–77.

[484] "Cotton Cultivation in Turkey," *The Dundee Courier*, 18 July 1867, 1; and Aksüt, *Sultan Aziz'in Mısır ve Avrupa Seyahati*, 159–60. It should not be neglected that Mehmed Sa'id Paşa, the Governor of Egypt visited Britain before Sultan Abdülaziz during the American Civil War. Beckert, *Empire of Cotton*, 256; and Henderson, *The Lancashire Cotton Famine*, 44. For a country suitable for monocrop agriculture like Egypt, cotton production has always been a priority.

[485] Eldem, "İktisat Tarihiyle Sanat Tarihinin Bir Kesişmesi," 77.

[486] "The Cotton Supply Association and the Sultan," *The Guardian*, 16 July 1867, 6; and Watts, *The Cotton Supply Association* (1871), 61–62.

could be found in the belief of one of the former mayors of Manchester[487] and an alderman, Abel Heywood: "If the future of Turkey were to be great, it would be so only by the adoption of the institutions of Western Europe."[488]

In 1868, a few months after Abdülaziz's visit to Britain, the letter of Nathan L. Buckley, the Chairman of the Asia Minor Cotton Company, to the CSA was quite harsh. Buckley complained that they were not given a space to use their "energies and capital." Their past five years of experience seemed like a colossal disappointment: "Instead of being allowed free scope legitimately to employ our energies and capital, we find petty impediments placed in our way on every side."[489] According to Buckley, the government's policies initially gave confidence to investors. Tax regulations and ease of importing machinery made people content, but as mentioned earlier in the thesis, there was no integrity in the Ottoman bureaucracy. Everything was not carried out within the framework of a central plan, and it was not possible to talk about any model that was followed. For example, Buckley reported that one season a tax collector insisted on imposing a double-weighing tax upon cotton from one of the surrounding cotton (ginning) mills, local officials supported these unpropitious moves, its books were confiscated, and the mill's managers were imprisoned. In another example, Buckley stated that they discovered lignite seams in Kırkağaç (in Manisa) and Sérres and that they were never used before the British

[487] The municipality mentioned here was actually a *municipal corporation*. The modern city of Manchester was established as the Manchester Corporation in 1838 under the Municipal Corporations Act 1835 and received its official city status in 1853. This municipal structure was different from that in the Ottoman Empire. Municipal Corporations Act, 1835, 5 & 6 Wm. 4, c. 76; Municipal Corporations Act, 1882, 45 & 46 Vict., c. 50; and Frangopulo, *Rich Inheritance*, 59, 107.
[488] "Visit of the Sultan to Manchester," *Manchester Weekly Times and Examiner*, 20 July 1867, 3. The text of gratitude presented to Sultan Abdülaziz is preserved in the State Archives. Furthermore, a painting was commissioned to commemorate the contact of Abdülaziz with his visitors from the Manchester municipality. Eldem, "İktisat Tarihiyle Sanat Tarihinin Bir Kesişmesi," 78. Eldem draws a parallel between the fate of the painting and the CSA's expectations regarding cotton production in the Ottoman Empire and states that both ended in a fiasco. Eldem, "İktisat Tarihiyle Sanat Tarihinin Bir Kesişmesi," 86.
[489] BOA, HR.TO 509/56, 23 September 1868.

found them, that they used these coals, and paid the government for them. This deal, Buckley claims, was later modified by the government to put businesses and ventures in trouble. The corresponding letter was conveyed to Musurus Pasha by the CSA's Secretary Isaac Watts, "his excellency's assistance" was requested, and the complaint was described as "so embarrassing and disastrous."[490]

These problems reveal a strange situation. On the one hand, promises were made; on the other hand, they were broken. How can any phenomenon be modelled when compliments and criticism fly in the same air simultaneously? In other words, it is relatively easier to write equations (or build 'models') in a discipline like history, but it is hard to solve them because they do not work most of the time. Although the story of each country could sit in a global setting by some means, the experience of the Ottoman Empire unveiled that cotton production in the Ottoman lands was subject to a *being without law*.[491] This example is beyond the scope of the thesis, even though the sample pool is large enough to point to the superstitious origin of the belief that laws of social phenomena can exist. Since there can be no talk of a transcendent order encompassing the entire social fabric in the Ottoman geography, no limits can be drawn for the creative proliferation of success and failures. In other words, beyond the apparent empirical constancy of the laws of social phenomena that preoccupied the (social) sciences of the nineteenth and twentieth centuries in particular, the possibilities for actual and chaotic change prevail. The infinity of these possibilities indicates that they are inexhaustible. In the words of Quentin Meillassoux, this is based on the lawless breaking of every law: ". . . mais de la

[490] Ibid.
[491] This phrase, with reference to Quentin Meillassoux, highlights the non-linear character of cotton farming.

brisure sans loi de toute loi [but from the lawless breaking of all law]."[492] One of the proofs of this situation is that in examining the history of cotton production, one cannot make an a priori inference from a determined situation to the following case since an indefinite multiplicity of different futures can be envisaged without contradiction. It is not only envisioned but also located in the same space-time.

A temporality whose formation is not subject to any determined law, that is, to no fixed set of possibilities, also demands to be a part of the historiography. The rejection of the metaphysical nature of models in the social sciences also goes through the sacrifice of any such idea of *absolute necessity*, and the historiography thus eludes the *principle of sufficient reason*. So, what makes then the plausible chaotic nature of history so terrifying? The actual disorganisation of actors, actions, and events limits any model's chances of survival, making them at times impossible. Yet, nothing is frightening in the reasonably chaotic nature of history. Just because every law is broken without law does not mean that actors, actions, and events have to change wildly. For such thinking, it is necessary to imagine that chaos is in a completely radical form, and there is no reason for this. There is no absolute/forced reason to switch from a general state A to a state B in simpler terms. Every transition from A to B, whether or not it conforms to social science theories and models, may be without reason, or neither is more necessary than the other. For example, in the previous example, it is seen that the promises made were not kept, and the relations were strained as if they would break. So, is this thread, stretched as if it were going to break, really broken?

[492] Meillassoux, "L'inexistence divine," 7. This situation has led scholars working in the humanities and social sciences to turn to linear problems. The persistent variants of non-linear events were intimidating as they could not be kept under control (and at low intensity).

It is not correct to speak of a planned and programmed strategy or policy to expand cotton cultivation, especially like what happened during the years of the American Civil War. Instead, efforts on cotton cultivation had rather turned into personal initiatives and become an ordinary part of the non-radical chaotic nature of the Ottoman government. It is possible to compare these steps taken by the central government to the aftershocks of an earthquake. The following lines of Nâmık Kemal summarise the situation of the Ottoman Empire after the Civil War:

> Ḥālimize biraz vāḳıf olanlar içün bedāhet derecesine vāṣıl olan ḥaḳāʾiḳdendir ki bizde şimdi tezyīd-i servet içün eñ ʿācil ve eñ büyük tedbīr zirāʿati ıṣlāḥ itmekdir. . . . Renc-berimiziñ esvābında ṭūfāndan biraz soñra insānlarıñ yürütdükleri ḥayvān derilerinden teraḳḳīce ne-ḳadr farḳ var ise zirāʿatimiz dahi devr-i Ādem'den-berü o nisbetde ya ilerülemiş ya ilerülememişdir. Zirāʿatce zemānımıza göre muḥtāc oldığımız teraḳḳiyātı ḥāṣıl itmek ise mücāhid-āne bir iḳdām ile Avrupa'dan çiftcilik fennini iġtinām itmeğe tevaḳḳuf ider. Bunı ḥāṣıl itmek içün her vilāyet dāḫilinde birkaç zirāʿat komisyonı ve birkaç numūne çiftliği ḥāṣıl itmek lāzımdır. [One of the apparent facts for those who have little knowledge of our situation is that the most urgent and most significant measure to increase wealth in our country is to improve agriculture. . . . As much as there is a difference between the clothes of our farmers in terms of progress from the skins of animals carried by people a little after the Flood, our agriculture has also either advanced or not advanced at that rate since the time of Adam. According to the conditions of our time, achieving the progress, we need for agriculture depends on obtaining the *fenn* of farming from Europe with hard work and effort. In order to achieve this goal, it is necessary to establish several agricultural commissions and several model farms within each province.][493]

Since Ottoman intellectual life presents an extremely disrupted picture of drawing a general portrait of Ottoman problems, care should be taken when

[493] ʿ*İbret*, no. 61, 25 Ramażān 1289/26 November 1872, 1. The failure in the field of agriculture would also be mentioned in the Ottoman Parliament of 1877, years later: "Ziraat için ne kadar düşünülecek şeyler vardır. Bu cümle ile beraber ziraat nezaretimiz, ziraat meclisimiz ve ziraat için fazla fazla memurlarımız vardır. Ziraat, sınaat ve hırfet her bir tarafda ilerledi. Bizde yalnız geri kaldı; çünkü ilerlemiş olsaydı müvazenemiz açık görünmezdi. Bu mes'elenin ehemmiyeti padişahımız efendimiz hazretlerinin taht-i âlî-baht-i Osmaniye cülûs-i hümayunlariyle beraber bir ziraat mektebi küşadını ferman buyurmalariyle isbat olunur." [There are so many things to think about for agriculture. We have an agriculture ministry, agriculture council, and too many civil servants for agriculture. Agriculture, crafts, and trades flourished on all sides. We are left behind; if it had progressed, our balance of trade would not have been in deficit. The significance of this issue is proved by the Sultan's order to establish an agricultural school.] Us, *Meclis-i Meb'usan 1293=1877 Zabıt Ceridesi*, 1:323.

attempting to read an entire period through its intellectual milieu. The profiles of these people are, so to speak, like stock market data, or, to put it more precisely, a reminder that trying to forecast the weather through the eyes of a meteorologist, risks being influenced by many different variables. Taking pictures of a petrified object frozen in time is much more challenging and often leads the researcher to inaccurate conclusions. The most non-speculated interpretation that can be drawn from this text of Nâmık Kemal is that the Ottomans were still at the point of grasping the significance of agriculture. There was an awareness, even the progressiveness of the era, but could an Ottoman man of letter ever resemble a calm sea? In another article published in the *ʿİbret*, Kemal this time talks about the "*ġarīb*" or "strange" reputation of trade and takes a stance indicating that the closer he is to agriculture, the further he moves away from the subtleties of commercial dynamics of the age:

> Ticāret ġarīb bir iʿtibār buldı. Biñ şirketden servetli ādemler, bir devletden ḳuvvetli şirketler peydā idiyor. . . . Buḫār sāyesindedir ki yigirmi beş otuz milyon nüfūsı olan yerlerde elli altmış milyon bār-gīr ḳuvvetinde temür [demir] ve bakır hiç ārām itmeksizin leẕāʾiẕ ve ḥavāʾicimiziñ tedārik-i esbābına çalışıyor. . . . Maʿrifet serhadd-i taṣavvura vardı. Ḳıṭʿalar ayrılıyor, deñizler birleşdiriliyor. ʿUmmān ortalarında karalar, kum deryālarında sular bulıyor. Fenn-i servet mesāʿīyi taḳsīm eyledi. Bir nā-ḳābil, sanʿatınıñ kendine ʿāʾid olan cihetinde eski hezār-fennlerden on on beş derece üstād oluyor. Bir çocuk uğraşdığı işde evvelki kār-güẕārlarıñ onuñdan on beşiñden ziyāde maḥṣūl fiʿile çıkarıyor. [The trade found a "strange" reputation. Men richer than a thousand companies create companies more potent than a state. . . . It is thanks to steam that in places with a population of twenty-five/thirty million, fifty to sixty million horsepower of iron and copper work without rest to supply the means of our "welfare" and needs. . . . Ingenuity had reached the limits of imagination. Continents separate; seas unite. There are lands in the middle of the ocean and waters in the seas of sand. *Fenn-i servet* (political economy, so to speak) divided labour. An incompetent person becomes a master of his art by ten or fifteen times more than the old polymaths. A child manufactures more products than ten or five of the previous masters/adepts.][494]

[494] *ʿİbret*, no. 3, 11 Rebīʿü'l-āḫir 1289/18 June 1872, 1. Paragraphs in the original text have been rearranged to fit into a narrative.

Based on his observations, Kemal articulates that the beginning of everything that is the product of civilisation is to "take a lesson" or "*ʿibret*." The text, which was once an example of the idea of progress, is conducive to different lessons in the eyes of new generations, who do nothing more than be the caretakers of the shrines. Nevertheless, none of these lessons has anything to do with laying the groundwork for progress. The article carries some insights into the *distance* between Ottoman intellectuals and developments around them. Although Nâmık Kemal states in his article that there are the "Tanẓīmāt," the "*Mecelle* (Ottoman Civil Code)," "two small railways," "many sorts of weapons," and a few "*chaussée*s (highways)" in "our" hands, it is not possible for the Ottomans to claim full ownership over any of them, including the highways. That is to say, none of them was the single-handed creation of the Ottoman Empire per se. Attributing the developments that are the result of new partnerships, from the European capital to the workforce, from theory to practice, only to a single denominator of the partnership can be discerned as an attitude that manifests no lesson has been taken. Moreover, compared to the factories in Manchester, referring to each and every facility in the Ottoman Empire as a factory makes the term factory itself meaningless and obscure. "We could not succeed in establishing a company. Is this how trade progresses?" Nâmık Kemal asks. All these questions were an effort to generate the concept of wealth in the mind of the Ottoman intellectual. So much so that Nâmık Kemal's question of whether there is a Muslim bank, not finding the Ottoman Bank to be a *müʾmin* (believer) enough, would occupy this process of wealth generation for a long time with the contradictions it contains. Nâmık Kemal, who bases the life of the people and the fact that they are still breathing all the way back to the works of their great ancestors, expresses the naïve excitement and desire of the Ottoman intellectual by not

answering the question of whether wealth comes from reasons or reasons from wealth. To the extent that, with the intoxication created by this excitement echoing in his lines, he attempts to build a school with a penny or two from the pockets of a hundred people. Therefore, just like in this example, someone who is aware of some of the realities of the period may stay away from some other realities. As such, the story of cotton should be sought within any kind of *distance*.

From the 1870s, the praises of the Ottoman Empire, perhaps unsurprisingly, gave way to a tone of disappointment. The British were caught in the distance mentioned above. Isaac Watts highlighted the inadequacy of state capacity as the reason for this disappointment. According to Watts, the government often lacks the power to exhaustively realise its own wishes and the demands of others and has not been able to fulfil its decisions promptly. Moreover, those who were ready and willing to help the farmers and introduce machinery into the country faced a variety of minor annoyances and hurdles:

> Repeated complaints were made by the Asia Minor Cotton Company of the difficulties placed in their way. At one time their machinery, though admitted duty free, when carried up the country could not be erected for want of authority from Constantinople, and much delay and loss were the consequence; at another time the supply of fuel, previously used with the knowledge and consent of [g]overnment, was arbitrarily stopped without warning by local officials, and ginning operations were interrupted at the busiest period of the year; at another season the attempted imposition of a tax-collector led to the suspension of all operations for twelve months, the seizure of the company's books, and the imprisonment of the factory manager.[495]

As the picture becomes gloomier from the 1870s onwards, a letter is sent from the CSA to Musurus Pasha, the Ottoman Ambassador to London, signed by John Cheetham, the President of the CSA; Edmund Ashworth, the Vice-President; and Isaac Watts, the Secretary. The letter contains recommendations for cotton

[495] Watts, *The Cotton Supply Association* (1871), 63.

cultivation. The first recommendation in the letter is to appoint local experts to monitor the cotton cultivation and assist the cultivators with their knowledge when necessary. It is recommended that these experts write periodic reports. It is distinctly underlined that there is a need for people who know the scientific dimensions and the subtleties of this business. The second recommendation draws attention to the importance of model farms and the latest farming techniques. In other words, the results of the practical or applied aspect of science are highlighted. The third one is for legal regulations and infrastructure problems. The tithe and lack of roads are presented as severe obstacles. Apart from these, it is emphasised that the best type of New Orleans seeds should be used. The lack of infrastructure needs was not unexpected, given the current state capacity of the Ottoman Empire. Still, the fact that the legal arrangements could not be made to please the CSA conclusively (without any hurdles) was related to the Ottoman Empire being a sovereign country, unlike India. Even though Britain used its economic and political power from time to time to impose its wishes, the Ottoman Empire was able to show its own will simply because it was not a colony. In a setting where British colonialism in India is determined by the dynamics there, it is not a correct approach to evaluate the initiatives in western Anatolia as in the case of India. At the end of the day, what kind of exploitation was this that most of the foreign (and 'colonial,' so to speak) ventures in western Anatolia during the American Civil War ended in bankruptcy? The fourth recommendation is to take serious steps against the scams, swindles, and frauds in the packaging of cotton and its preparation for the market. At the end of the letter, it is noted that the United States is recovering after the Civil War and that this is the last chance for the Ottomans: ". . . America is making such strenuous and successful efforts to recover the ascendancy formerly possessed; it is of the highest

importance that other competing countries should make all practicable exertions to secure permanently so valuable a branch of industry."[496]

By 1872, the view of the British press towards the Ottoman Empire became much more patent. *The Journal of the Society of Arts* reproached as follows: "Turkey does little or nothing more for us."[497] According to another article in the press, no country was as promising as Turkey in meeting the demand created by the American Civil War in 1862. Nonetheless, despite intense and successful efforts for a while, hopes faded over time.[498] Based on data provided by James Baker, the value of cotton exports fell from £1,560,968 in 1864 to £38,929 in 1874.[499] Even at a time when hopes were extinguished, private enterprises opened cotton factories.[500] Neither once a small British colony of technicians and engineers in Hasköy nor the British population in Pera could see a future in Istanbul. The British consul, Sir P. Francis, expressed this condition palpably in his letter to Earl Granville: "The information which I have now to offer on the subjects of these communications will not, I fear, be of much special use, because Constantinople, and the districts adjacent thereto, are

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[496] Watts, *The Cotton Supply Association* (1871), 161–63.

[497] "Raw Cotton and Cotton Plants," *The Journal of the Society of Arts* (16 August 1872): 789. This statement was made despite the increase in Turkey's cotton exports to Britain from 1871 to 1872. "Imports of Cotton into the United Kingdom," *The Journal of the Society of Arts* (14 June 1872): 636. Considering that this news was made even though the Ottomans sent cotton samples to the London International Exhibition of 1872, it is uncovered that the atmosphere at the very beginning of the American Civil War has come to an end. BOA, HR.MKT 747/86, 29 Rebīʿü'l-evvel 1289/6 June 1872.

[498] "Raw Cotton and the Cotton Plant at the International Exhibition of 1872," *The Journal of the Society of Arts* (1 November 1872): 934. It should also be underlined that Turkey's cotton exports to Britain grew in the years when these reports were made. "Imports of Cotton into the United Kingdom," *The Journal of the Society of Arts* (14 June 1872): 636. During these years, Hyde Clarke, the familiar name of the story of cotton in western Anatolia and the south-eastern Balkans, shifted his interest to esparto cultivation in Söke, Izmir. However, the decline was not seen only in the Ottoman Empire. A similar reduction is discerned in India after 1866. After the war, cotton exports in China also ceased. Surdam, "King Cotton," 124. To see the decline in all countries except the United States, please see Mudge and Nourse, *Report upon Cotton* (1869), 101.

[499] Baker, *Turkey in Europe*, 532.

[500] A cotton factory was opened both in Adana and Thessaloníki. BOA, ŞD 2870/52, 3 Ẕi'l-ḥicce 1289/1 February 1873; and BOA, ŞD 2006/10, 28 Ṣafer 1292/5 April 1875. A year ago, it was notified to the relevant authorities that cotton seeds to be imported to Adana for the factory opened there were exempt from customs duty. BOA, ŞD 2116/28, 17 Cemāẕīyyü'l-āḫir 1289/22 August 1872.

eminently unfitted for English immigration."[501] There was more reason here than met the eye why Sir P. Francis took such a pessimistic stance. In his letter, Francis contended that there was no need for the British in agricultural labour, that the technology and techniques used in agriculture would be too primitive for an English farmer, and he underlined the story of every foreigner he knew dealing with agriculture in Turkey ended in failure. According to Francis, putting new wine in old bottles would have been more of a debacle than a success. The reason why Francis thought this way was that even if technology transfer could be done successfully, it would not be sustainable. For example, there was a lack of capital to deal with the repair of instruments in the event of a breakdown. The local agricultural system, the form of taxation, property problems, lack of security for life in some places, deficiency of roads, and inadequacy of markets gave rise to issues for both local and foreign actors.[502] Therefore, as claimed by Francis, there was no room for competition in these lands.[503] Later, Samuel Sullivan Cox also expressed similar problems, underlining that the agriculture practised in the remaining European lands

[501] Francis, "Turkey. Sir P. Francis to Earl Granville," in *Further Reports from Her Majesty's Diplomatic and Consular Agents Abroad, Respecting the Condition of the Industrial Classes and the Purchase Power of Money in Foreign Countries* (1872), c. 635, at 62:369. The proverb shared in the Australian press about cotton cultivation in Turkey did not correspond to the reality this time: "There is a Turkish proverb which says that the man who knows how to wait is in the end sure to conquer." "Turkey: The Cultivators of Cotton, Constantinople, October 26," *The Empire* [Sydney], 15 February 1866, 6.

[502] Francis, "Turkey. Sir P. Francis to Earl Granville," in *Further Reports from Her Majesty's Diplomatic and Consular Agents Abroad, Respecting the Condition of the Industrial Classes and the Purchase Power of Money in Foreign Countries* (1872), c. 635, at 62:369. Another study about the reform endeavours in Turkey by Eugène Morel, conveying the lines of Xavier Heuschling, drew a similar picture to the one drawn by Sir P. Francis and pointed out that agricultural life was not scientific: "Mais la science de l'agriculture n'y existe pas, et les productions si variées du sol sont dues uniquement à la routine." [But the science of agriculture does not exist there, and the varied productions of the soil are due solely to routine.] Morel, *La Turquie et ses réformes* (1866), 168.

[503] ". . . there is no place in Turkey itself for competition between native bad work and imported better work, and that the latter is only occasionally called for by reason of the unnatural mixture of Oriental and Occidental civilization in Turkey." Francis, "Turkey. Sir P. Francis to Earl Granville," in *Further Reports from Her Majesty's Diplomatic and Consular Agents Abroad, Respecting the Condition of the Industrial Classes and the Purchase Power of Money in Foreign Countries* (1872), c. 635, at 62:373.

of Turkey could not be qualified as *scientific*, and he drew a hopeless portrait of scientific agriculture in the Ottoman Empire.[504]

When the year 1876 is considered, unfortunate events come to mind in terms of Ottoman history, at least in the eyes of the central bureaucracy. The Herzegovina uprising, the April Uprising of 1876 or the Bulgarian revolt, the Salonika (former name for Thessaloníki) Incident, the *ṭalebe-i ʿulūm* (*ṣofta*s) demonstrations, the dethronement of Sultan Abdülaziz, the accession of Murad V, the controversial death of Abdülaziz, and the dethronement of Murad V immediately after his 93-day reign were the highlights of these tough events. The story of cotton proceeds amidst all this political turmoil and uncertainty. A basic synopsis of the journey is the following: The state capacity of the Ottoman Empire could not reach the level that would satisfy the actors who wished to invest in the cotton production of the Ottoman state from various countries, notably the British and the CSA. However, the conviction that causality is behind the events has produced a mysterious layer of meaning. Although nineteenth-century rationalism has implemented specific models to overcome this baseless artificial layer of meaning, the complexity that renders the models partially or completely dysfunctional has not been overcome.

[504] Cox, *Diversions of a Diplomat in Turkey* (1893), 609.

CHAPTER 5

CONCLUSION

The thesis critically addressed and re-evaluated the impact of scientific and technological input on late Ottoman cotton cultivation between 1840 and 1876 in the context of 'export demand' shifting predominantly towards the Near and Far East during the American Civil War. The central argument of the thesis was that foreign cotton entrepreneurs[505] mainly in Asia Minor and the southern Balkans attempted to homogenise the internal differences between Egypt, India, the West Indies, and the Ottoman Empire—local actors also partially followed the said pattern. This proclivity caused them to neglect the peculiar socio-economic (and political) structure of the Ottoman Empire and to catch on the *social* as only having a share in a commercial commitment. As highlighted throughout the thesis, the Cotton Supply Association (CSA) argued that cotton cultivation and production in the Ottoman Empire would escalate by solving the empire's financial and infrastructural problems. This supposedly 'brilliant' idea was also recurrently weighed up in periodicals of those years, such as *The Journal of the Society of Arts*.[506] When the Ottoman state reports and correspondence are inspected, it is seen that this idea emerged in the same way on the Ottoman side.

That being the case, the approaches of local and foreign actors to Ottoman cotton farming in the second half of the nineteenth century can be recapped as follows: The required resources and budget were tried to be met through local and foreign institutions and actors along with their limited material opportunities.

[505] The actors/objects underlined here are predominantly foreign because even though there are many local actors as well, they do not appear as much as foreigners in the Ottoman press and archives regarding cotton cultivation and production.
[506] "Discussion," *The Journal of the Society of Arts* (22 December 1871): 101.

Nevertheless, the fundamental complications were: (i) the scarcity of labour and capital, (ii) infrastructural problems as well as the high cost of the necessary infrastructure projects, (iii) simple and superficial solutions to multi-layered problems arising from the dynamic structure of different actors and phenomena, and (iv) the Ottoman Empire's inadequate state capacity along with the failure of its bureaucracy to respond uniformly to the steps taken. Until now, in the studies on the cotton cultivation and production of the Ottoman Empire in the nineteenth century, it has been largely suggested that the root cause for the failure of this endeavour was the inadequacy of *overseas demand* to transform Ottoman agriculture. All historiography has been packed into a supply-demand dichotomy determined by capitalist dynamics altogether. However, it was almost impossible for the Ottoman Empire, which was caught unprepared for the opportunities created by the American Civil War, to keep up with the new order in which the imbalances and inequalities between the states were increasing.[507]

Much of the cotton story faced a more critical phenomenon than overseas demand. Farmers and workers who could apply the latest agricultural techniques, i.e. agronomy, and be diligently involved in the planting of exotic cotton seeds were needed, but a strategy that could meet this need could not be implemented. Thus, merchants, mainly from Europe, did not dare to enter the inner regions of (western) Anatolia, and although they gained dominance in some areas, they could not shape the socio-economic dynamics as much as they desired. In this respect, particularly in narratives that rely on less sophisticated versions of 'history from below,' the role played by these actors has been compressed into a narrow narrative that benefits only one side, in which one side is the evil oppressor and the other side the innocent

[507] Eldem, *135 Yıllık Bir Hazine*, 17.

oppressed. Foreign actors generally waited to grow cotton in their own agricultural lands or bring the cotton crop to the Izmir market. Occasionally, they preferred to dispatch their intermediaries to the inner regions of western Anatolia. Even though a certain amount of efficiency was obtained from the scientific and technological input that entered the country in this period, this efficiency could not reach the stage that foreign demand dreamed of. Thus, the impact of the raw cotton trade, which alone accounted for more than 50% of the value of the total Ottoman exports to Britain in 1864, never reached again the level it had climbed to in this period.[508]

To summarise briefly, foreign entrepreneurs initially attempted to increase cotton cultivation with a few modest steps, such as through limited transfer of scientific and technological developments and partial legal arrangements. Nonetheless, in the end, due to the shortage of raw cotton caused by the American Civil War, they would have no choice but to move from the consultant and supplier to a much more active role. For example, in the beginning, the actions often consisted of relatively simple practices, such as distributing exotic seeds free of charge, but these attempts gradually evolved into participating in railroad tenders and even ventures to set up model farms. Nevertheless, their plans and estimates could not transcend dealing with financial, legal, or infrastructural issues because they did not focus on what partnerships turned into at the actors' hands and what methods they used to bring them together. In other words, non-economic and political factors that determine socio-economic life and least fit the models have been ignored. However, perhaps the most integral elements that distinguished the operation of Ottoman cotton production from other regions were the forms of relations that were

[508] Between 1870 and 1874, the share of cotton in the total Ottoman exports to Britain fell to 6.6%. Kasaba, *The Ottoman Empire and the World Economy*, 91. Izmir, Adana, Tarsus, Mersin, and Macedonia were the leading areas in this period. Watts, *The Cotton Supply Association* (1871), 66.

outside of state intervention and market relations. Despite some apparent resemblances, the conditions prevailing in Egypt, India, and other well-known cotton-producing regions were not valid in the Ottoman Empire. These actors were both late for the exam they had with the people and dynamics of different conditions, and they were not as successful as they hoped in the end.

The reasons these actors put forward for their failure were roughly: (i) the primitive methods of agriculture in the Ottoman Empire, (ii) the mismatch of state capacity with the size of its vast geography, (iii) internal and external differences of the Ottoman state and its peoples with other cotton-producing regions and peoples, (iv) the callousness of local administrations,[509] (v) the hindrance of foreigners from owning land (private property) until a particular date, and (vi) the simultaneous involvement of more factors than local and foreign actors could control. Therefore, it was not possible to change habits overnight, but the global supply chains of raw cotton had no time to wait for transformation. Also, the dynamism needed to establish the cooperation of an agrarian subject and a relatively integrated elite with the West varied drastically from one region to another. For this reason, the steps taken and the plans drawn could not calculate countless actors/objects and variables and simply followed a model that seemed reasonable and rational just on paper.

The main idea behind the cotton policy of the Ottoman Empire comes to life in a caricature published in the magazine *Cem* [*Djem*][510] years later (see Appendix F)—the caricature is a stinging satire on the general reform policies of the Ottoman

[509] The term of office of Ottoman bureaucrats and civil servants in the regions where they were located was shorter than the tenures of British consular staff and private entrepreneurs. So, the duration of tenure was also a salient factor in this problem. Given the exceptional official incumbency of Musurus Pasha in London, it was almost impossible to stumble upon such an actor locally in the Ottoman Empire.

[510] It was a weekly, political, literary, and illustrated humour magazine published on Thursdays. It was published in French and Turkish.

Empire. The young man asks: "What do you think about the improvement of the tombs?" The director answers: "My idea is to set a fixed price first, then have a uniform, then establish a directorate, then send an investigative team to Europe, and then bring in an expert."[511] A similar path was followed in the cotton policy of the Ottoman Empire. Even though a fixed price was not set in the first place, the notorious tithe was (attempted to be) regulated, and guidelines were produced that would attract the landlords to cotton cultivation. Then, the acknowledged agricultural policy was followed by free cotton seeds distributed to the farmer. What makes this policy no different from wearing a uniform and makes it comparable is the way it is implemented. Chasing the fate of the distributed cotton seeds turned into a never-ending story as the Ottoman government did not keep track of what the farmers were doing with the cotton seeds. In this period, various committees, subcommittees, and institutions were established to promote agriculture, and their future reminded of the established "directorates." Contrary to the caricature drawn in the *Cem* magazine, the investigation committee(s) had come to the Ottoman Empire with enthusiasm. For example, during the years when the CSA took an active role, the Imperial Cotton Commission appeared. On the other hand, a considerable part of the resemblance goes further back to the Cotton Famine and even before. Therefore, when writing the history of a commodity that constitutes a negligible part within other export items of a country, considering the commodity as a *becoming* that already contains many beginnings that have not yet taken place distinctly guides the historian that every commodity is the product of historical processes.

[511] "Bir Mülakat [Caricature]," *Cem* [*Djem*], no. 49, 2 May 1929, 8. Although the *Cem*'s approach corresponds to the contemptuous view of the early Republican elite against the Ottoman Empire, it should not be shirked that the *Cem*'s criticism is also directed against the Republican regime. Even though its language was less sharp compared to the post-Constitutional era (after 1908), the *Cem* persisted in criticising the current government and sometimes paid the price for it.

However, where there was effort, success could not always be achieved. No customs duty was collected on tools, equipment, and machinery imported from Europe, and American seeds were distributed free of charge. Pamphlets were handed out, and newspaper articles were written on how to plant these exotic seeds, care for the cotton plant, and eventually harvest the crop. The export duty on cotton wool was reduced to one per cent *ad valorem* for a while, and regulations were made in the tithe and land taxes. Despite all these efforts, they did not survive, as William Sandford perspicuously states in his report:

> Commissioners who had been travelling through some of the [p]rovinces some years ago were represented by Sir Henry L. Bulwer to have done much temporary good, but that eminent diplomatist also took [the] opportunity of expressing the opinion that the good would only be temporary if a casual journey were not converted into permanent supervision.[512]

The inability to forecast this problem in the first place due to the insufficient state capacity thwarted the completion of the training of lower-level officials, the diffusion of modern cotton-growing techniques to the base, and the elimination of the infrastructure deficiencies. Notwithstanding the fact that scientific and technological input had some undeniable positive effects on Ottoman cotton production, it is hardly possible to go beyond a historical analysis of social phenomena since agricultural production and production strategies in the Ottoman Empire did not fit into a specific model. Although private and public institutions and initiatives were tried to be analysed with all their maturation, decay, and inactivation periods in a way to capture the change of their movements in their everyday lives, most non-/human actors sketched bewildering patterns. Especially after the American Civil War, the survival of an institution or any enterprise has become riskier for shareholders.

[512] BOA, HR.SFR.3 118/15, 5 January 1867.

More importantly, scientific and technological input in cotton agriculture has come to the forefront as the factor(s) that precipitated uncertainty together with non-human actors/objects in the actions of different collaborations, both causing the increase in the amount of raw cotton produced but also turning out to be the root cause for its continuity. Because the transfer of the most preferred method and instruments to the Balkans and Anatolia under the name of 'technology transfer' was not enough to provide the desired efficiency in cotton production. Countless factors played a role in every technology and method, from people to institutions, from institutions to natural events, from natural events to even coincidence.

For this reason, a relatively comprehensive picture of cotton production as a phenomenon is only possible with a narrative that addresses these reverse uncertainty-generating actors and networks. Not only the demand but also the factors discussed within the scope of these uncertainties had an impact on the growth in Ottoman cotton production in the years corresponding to the American Civil War. In the presence of scientific and technological input, it is within reach to come across various narratives about the enhanced productivity of agriculture made with mechanised and reorganised techniques. On the other hand, in the absence of scientific and technological input, agriculture is not only abandoned to its primitive methods, but also the ginning of the harvested raw cotton cannot be done meticulously, and the crops are infested with diseases and insects. Reflecting on the natural phenomena and forces that are not attainable to be in charge of, apart from the institutionalised science, these uncertainty-generating factors bear the power of affecting the annual cotton production rates. Putting these factors, namely scientific and technological input(s) into the background, combined with the understanding that homogenises the differences between regions, dominates cotton production

practices and succeeds in carrying the story to the global level of analysis but also causes the distinctive dynamics to be ignored and eventually forgotten.

The issue, which is dealt with in the axis of crisis and global transformation shaped around peculiar dynamics and practices, reveals that economic parameters alone are insufficient and reductionist to shed light on Ottoman cotton production. Local and foreign actors, who took an ambivalent approach to scientific and technological input, made it difficult to place the Ottoman Empire's story of cotton production into any framework. Focusing on the history of science and technology rather than economic parameters alone and seeking the possibilities of the political economy of this story offers an alternative view for the rationale of the slight increase in cotton production and why the expected upward surge did not occur. According to this view, examining cotton cultivation and production efforts between 1840 and 1876, when one is too close to a phenomenon, it becomes lucid how this familiarity distorts the perspective, and when one is too far away, then it leads to another reverse distortion in the perspective, but this time the source(s) turns out to be the distance itself. In the years covered by the thesis, both local and foreign actors could not find a balance between the distance and proximity in question to comprehend the world they were living in. In Ottoman cotton cultivation, where a homogeneous mass or mass behaviour could not be mentioned, the information produced, carried, and disseminated by sensory actors had to be processed through entrepreneurial actors, but the lack of capital and the nature of unplanned strategies engendered various unexpected obstacles to the entrepreneurial actors. Due to these obstacles, the entrepreneurial actors could not gain full-scale control over the contraction of cotton cultivation and production processes—such as in Cyprus (*cf.* footnotes 370 and 445)—which can be compared to muscle structure in a biological

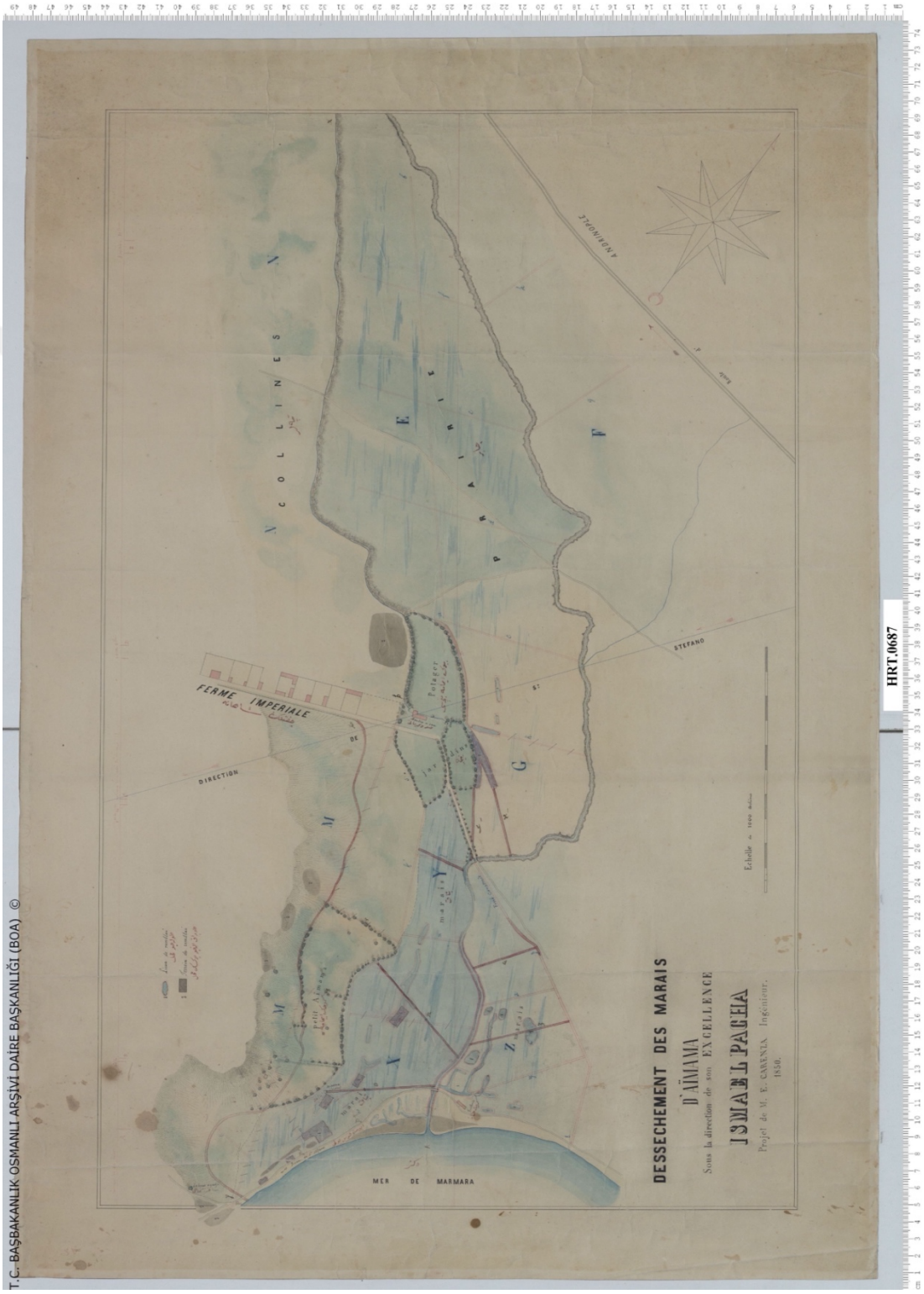
sense. Sometimes these obstacles arise from the class of bureaucracy that participates in the narrative as transmitter actors.[513] As a note for future studies, considering the situation of cotton agriculture in Cyprus, which came under British rule in 1878, or after the *Düyūn-ı ʿUmūmiyye* in general, it can be traced how 'full-scale control' played a role in cotton cultivation and production in the light of changing networks.

To sum up, in Ottoman cotton cultivation and production, which took place under the shadow of weak ties now and then, where sensory and entrepreneurial actors were not connected, the actors acted as if they did not require cooperation. The complicated situation arising from this lack of communication or solitude makes the coincidence absolute. Randomness and unpredictability come to be unmitigated and divine in the absence of scientific and technological input(s), two inextricable factors that cannot be set aside as they have proceeded to become institutionalised in the nineteenth century. Even though this transformation was not completed during the process, it affected the process. All these being the case, if no conditions are supposed to be necessary, then everything is under the rule of a "non-radical probability." Ottoman cotton cultivation and production, too, did not operate on certain foundations like any other historical event.

[513] Similar patterns encountered in cotton cultivation discussed in the thesis were also seen in *viticulture* of a later period. For more details, please see Eldem, "A French View of the Ottoman-Turkish Wine Market, 1890–1925" (2017).

APPENDIX A

CARENZA'S AYAMAMA DRAINAGE PLAN



M. E. Carenza's plan for the draining of the marshes in Ayamama, near Yeşilköy in Istanbul. BOA, HRT.h 687, 26 Şafer 1267/31 December 1850.

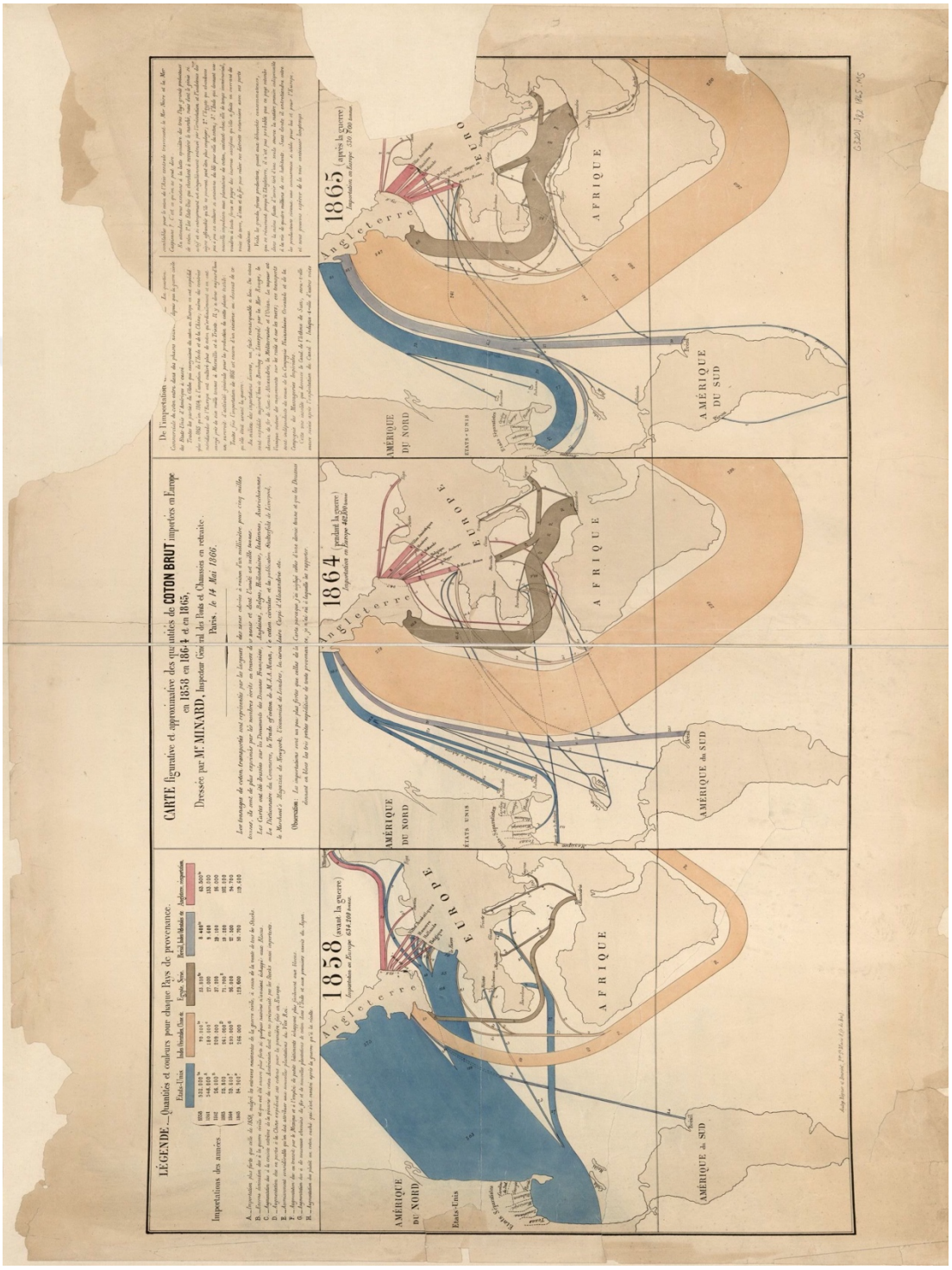
APPENDIX B

THE MAP OF THE IZMIR-AYDIN RAILWAY

The map illustrating the Izmir-Aydin Railway. BOA, HRT.h 1744, 2 Rebīʿü'l-āḫir 1301/31 January 1884.

APPENDIX C

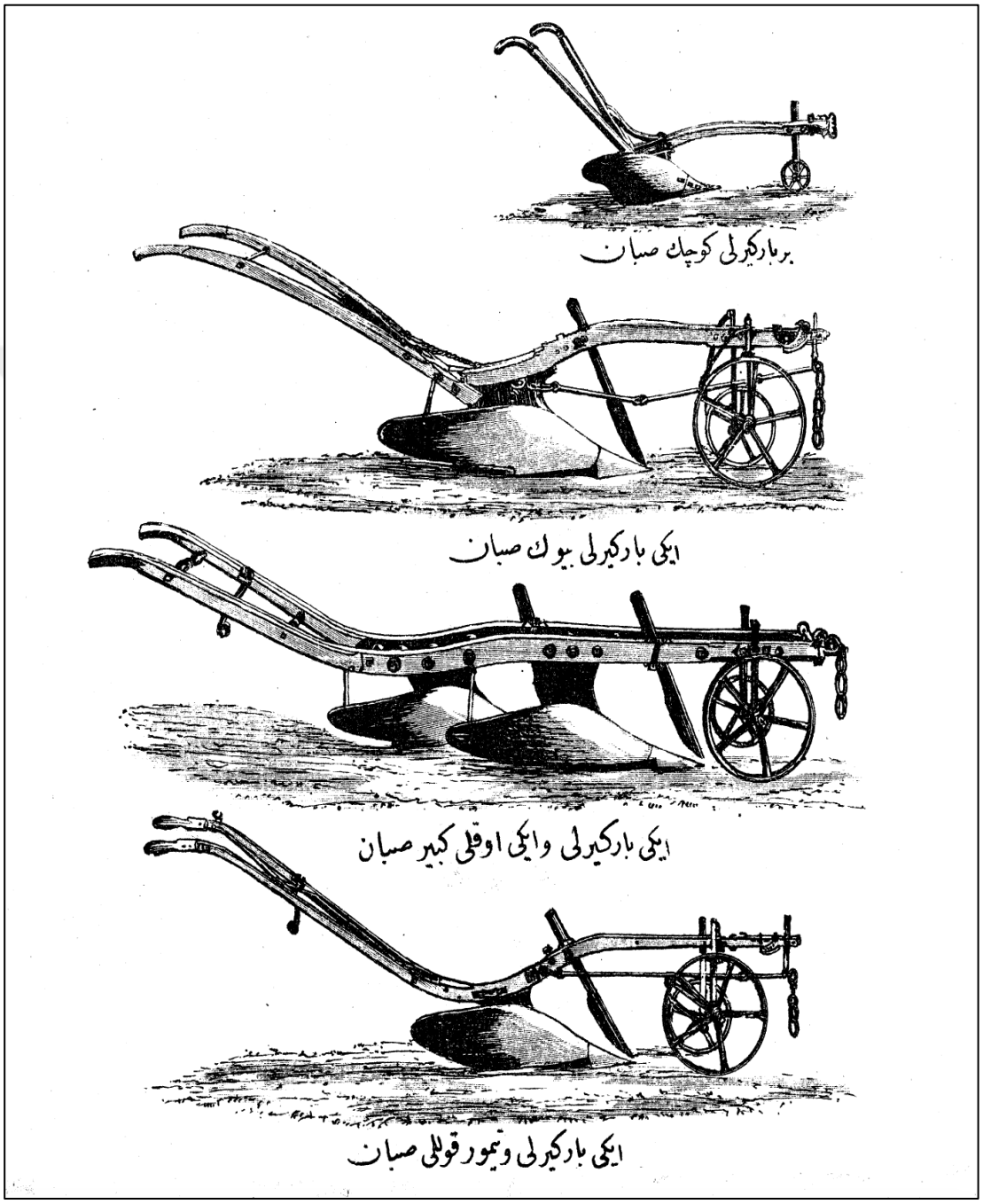
MINARD'S MAP OF COTTON IMPORTS



Figurative and approximate map of the quantities of raw cotton imported into Europe in 1858, 1864, and 1865. Minard, "Carte figurative et approximative des quantités de coton brut importées en Europe en 1858, en 1864 et en 1865 [Map]," LOC G3201.J82/1865.M5, 1866.

APPENDIX D

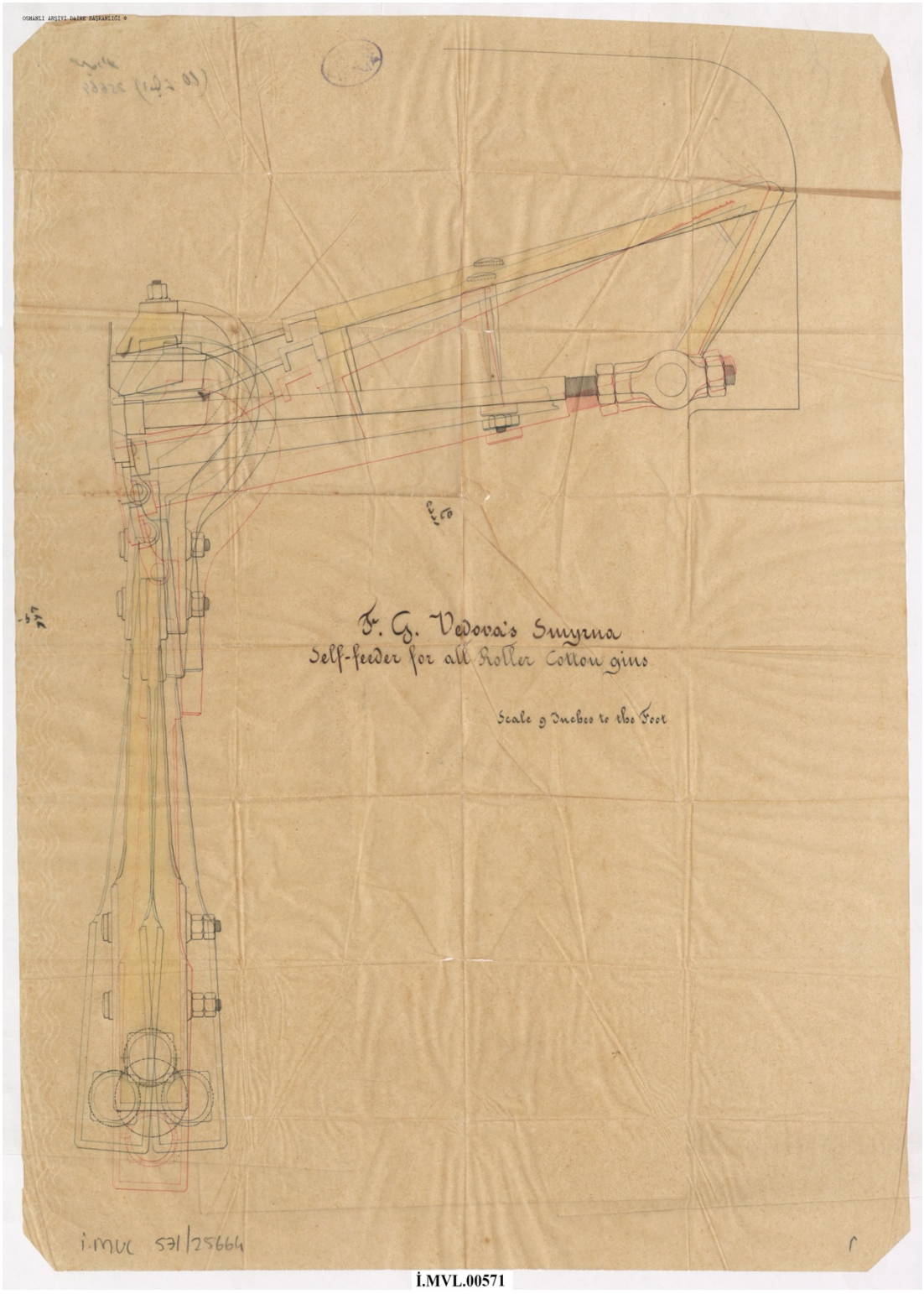
SAMPLE PLOUGHS FROM THE 1863 EXHIBITION



From the model at the top to the lowest, in order: (i) a small plough with one horse (*bir bār-gīrli [beygirli] küçük saban*), (ii) a large plough with two horses (*iki bār-gīrli büyük saban*), (iii) a large plough with two horses and two handles (*iki bār-gīrli ve iki oklı kebīr saban*), and (iv) a plough with two horses with iron handles (*iki bār-gīrli temür [demir] oklı saban*). "1863 Sergisi'nden Numūne Pulluklar [Sample Ploughs from the 1863 Exhibition]," *Mirʾāt* 1, no. 1 (Ramażān 1279/February-March 1863): 35.

APPENDIX E

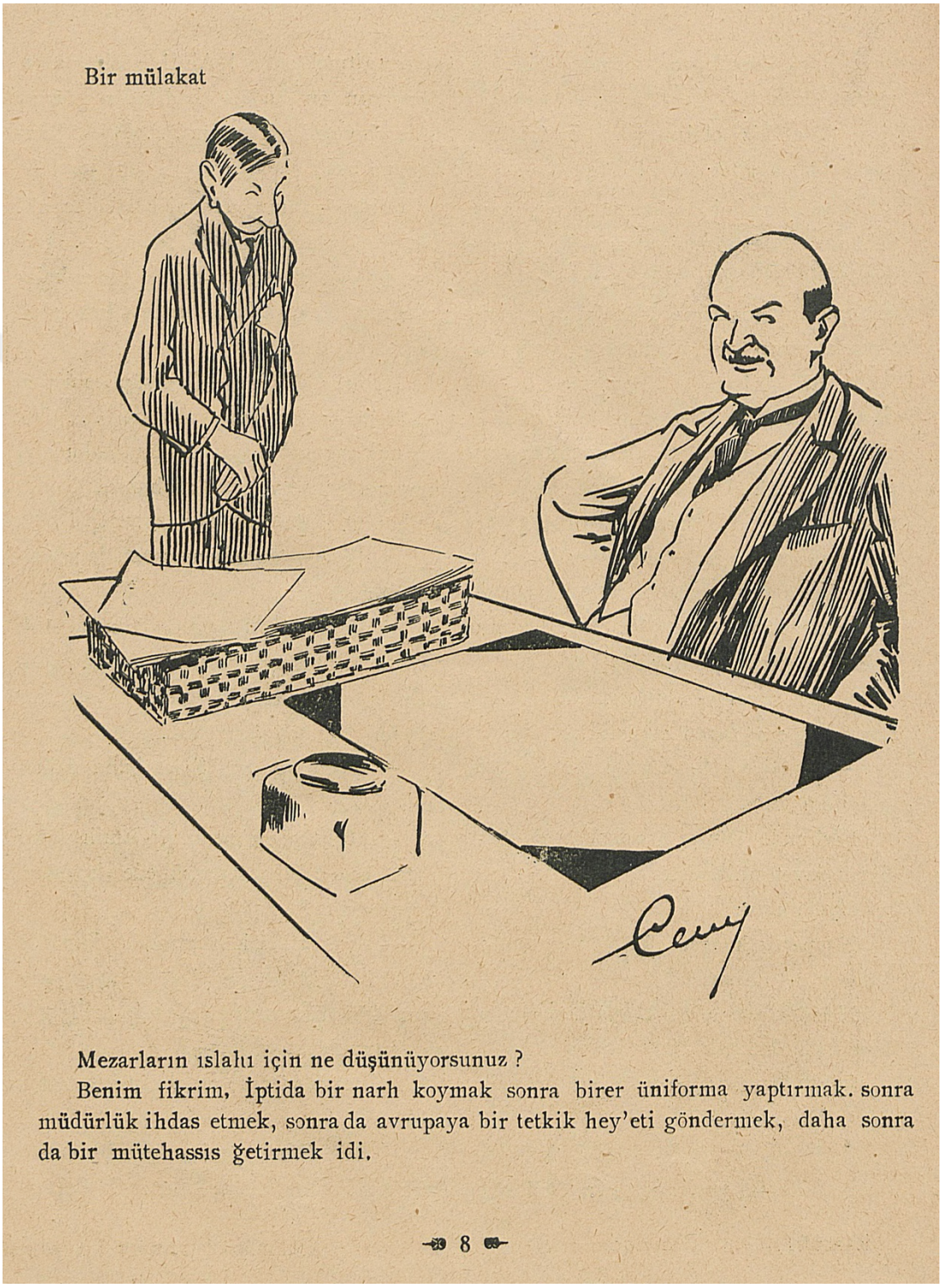
VEDOVA'S SELF-FEEDER FOR COTTON GINS



A machine for cotton ginning invented by Frederick George Vedova, a British subject, residing in Izmir. BOA, İ.MVL 571/25664, 27 Ẕi'l-ḥicce 1283/2 May 1867.

APPENDIX F

A CARICATURE FROM THE MAGAZINE *CEM* [*DJEM*]



A caricature in the magazine *Cem* [*Djem*] that mocks the general reform policy of the Ottoman Empire and might also set a precedent for cotton cultivation. "Bir Mülakat [Caricature]," *Cem* [*Djem*], no. 49, 2 May 1929, 8.

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